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ABSTRACT

Intended for trainers developing inservice workshops for regular classroom teachers and/or generalists, the manual contains information that evolved from field experiences and training efforts of special educators associated with the Rocky Mountain Regional Resource Center's (RMRRC) program to explore ways to support teachers serving handicapped children in the least restrictive environment possible. Information is divided into five major sections: identification, diagnosis, prescription, programing, and evaluation. Each section contains an introduction and overview, a narrative, and a summary. Topics covered include the following: observation of behavior, screening instruments, profiling, methods in diagnosis, total assessment, task analysis, diagnostic teaching, organization of diagnostic data, writing a prescription, scope and sequence, instructional materials and programs, instructional methods and techniques, evaluative tools, and behavior measurement. Appended materials include a glossary of items for systematic observation of behavior, categorical descriptions of handicaps, a review of formal screening instruments and diagnostic tests, descriptions of instructional materials and techniques, a list of publishers of instructional materials, an overview of the original training program, a report on the RMRRC Stratistician Project, and a paper titled "Reading the Environment to Gain Acceptance". (SBH)

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INFORMATION FOR INSERVICE TRAINING DEVELOPMENT:

A COLLECTION FROM FIELD EFFORTS OF THE RMRRC

(Rocky Mountain Regional Resource Center)

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INFORMATION FOR INSERVICE TRAINING DEVELOPMENT

A COLLECTION FROM FIELD EFFORTS OF THE RMRRC

(Rocky Mountain Regional Resource Center)

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The information compiled in this document reflects the efforts of many people. The major contributors to the present format are Susan Harrison, Merrill Johnson, Frank South and Tom Valeski, with assistance from Robyn Carter, Ann Jaramillo and Jerrie Ueberle. They drew heavily from an earlier training program which contained their own input along with that of Mary Buchanan, Patricia Clay, Jan Mallett, Patricia Nelson, Barrie Richards, Frances Schwaninger-Morse, Art Welch and Robert West. Also contributing to that earlier compilation were Sara James Andersen, Joanne Gilles, Herman Houston, Cregg Ingram, Iva Dene McCleary and Judy Smith.

The original training program was piloted with special educators throughout the state of Utah. They provided formative and summative evaluation of the program, offering suggestions as to what appeared appropriate and relevant, what needed to be improved or to be deleted. Included in this group were:

Virginia Adamson
Jeanette K. Amman
Milo Berry
Irma H. Burge
Lee Ann East
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Ron Jarrett
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Nancy C. Redding
Larry W. Roylance
Rosemarie Smith
Chris Taylor
Suzanne Taylor
Christine Timothy
Frederick White

After the summative evaluation by this group had been incorporated into the document, a second group of special educators from throughout the country were asked to read the material and make suggestions for compiling it into a written package that could be printed and disseminated. These people were Millie Erdman, Judi Sherman Deppe, Katy Harris, Julie Martineau, Art Welch and Bruce Weston.

The first editing was in the hands of Ann Jaramillo, Carolyn Moore and Jean Moore. Final editing was done by Jean Moore.

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The RMRRC Training Coordinator responsible for the development and monitoring of the training program which provided the data for this work was Frank South. His many hours of individual effort and support of others involved were pivotal in the development of this manual.

With all of these efforts the document must be considered as still in the evolutionary process of development. Training of inservice trainers of teachers is critical in the present special education milieu. Adding new information to any such training program and/or deleting information no longer relevant is imperative. With that dynamic as a basis, the above persons have willingly given of their time and expertise and to each the RMRRC is genuinely appreciative.

Judy Ann Buffmire

Judy Ann Buffmire, Director
Rocky Mountain Regional
Resource Center

INTRODUCTION

This manual contains information that evolved from field experiences and training efforts of special educators associated with the Rocky Mountain Regional Resource Center (RMRRC). During the RMRRC's four years, an ongoing thrust explored ways to support teachers who were serving handicapped children in the least restrictive environment possible. (These efforts are referred to as the Stratistician Model.)

Numerous individuals have contributed to developing this information, and the contents reflect some uneveness. Much of the work was developed during an RMRRC training program for generalists* who were to work directly with teachers. Later work was directed toward local and/or state training teams for their use in training generalists. The two different vantage points are apparent throughout the text.

The individual sections were written to stand alone for specific training needs. The composite text addresses the appraisal needs** most often identified in RMRRC field activities. The information was collected in an attempt to help answer trainers' needs for readily available information in development of inservice workshops for regular classroom teachers and/or generalists.

The manual consists of five major sections: 1) Identification; 2) Diagnosis; 3) Prescription; 4) Programming; and 5) Evaluation. Each section contains an introduction and overview of the section, a narrative and a summary. In addition, the appendix section includes supplementary information that may be of interest to the reader. Examples are papers on categorical descriptions of various handicapping conditions (Appendix B), development of the RMRRC training program (Appendix G), information on the Stratistician Model (Appendix H), and reading the environment (Appendix I).

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*A generalist is a teacher certificated in any area of special education who works as a resource teacher to classroom teachers.

**The Request for Proposals 74-6 defines a comprehensive appraisal process as follows: "A systematic comprehensive appraisal process includes (1) referral and screening, (2) individual assessment, (3) development of appropriate individualized educational program and placement, (4) development of the educational program based upon effective communication and coordination among essential personnel, and (5) provision and maintenance of testing and evaluation practices to determine the effectiveness of the individual educational program and also to assure the continued appropriateness of the educational program and placement." (RFP 74-6, Attachment "A" MSCF#12, p.1.)

The RMRRC project was terminated one year early and the planned final polishing of this document was not possible. The stratistician effort is only one of many developed in the thrust toward mainstreaming handicapped children. This manual, then, is submitted to the educational community as one building block in the dynamic of developing better models to serve more handicapped children.

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Chapter One

IDENTIFICATION

The regular classroom teacher who may have some handicapped children in the class who are not receiving special instruction needs to identify those children. It may be discovered that some children are able to function adequately in the classroom in spite of their handicapping conditions, with only minimal adjustment in their programs. Others will be able to remain in the regular classroom but may require occasional sessions with a specialist. Some children will need special education intervention through a special classroom, at least temporarily.

The process of identifying potentially handicapped or "high risk" children in a classroom need not be complicated nor difficult. In this chapter we will talk about methods of observation and screening through which a teacher can make some general assumptions concerning the students whose problems will require further diagnosis before appropriate interventions can be determined.

Identification is not a clinical diagnosis, but a method of observing and recognizing an educational, behavioral, or physical handicap, or a developmental discrepancy. It is a "screening" process to sort out those children who appear to manifest such characteristics. Early identification often helps to prevent a problem from increasing in severity by supplying data which will document the need for diagnosis. It defines the base for a remedial prescription and sets some limitations for an educational modification. The purpose is to identify a child's strengths and weaknesses, so that strengths may be built upon and weaknesses minimized.

Ideally, every student with whom an educator comes in contact should be screened for conditions which may hinder learning. If this procedure takes place in an efficient manner, potential problems can be pinpointed and, if needed, diagnosed in depth.

In this chapter, overviews of three methods of identification within the regular classroom are presented.

Observation of Behavior

The teacher should have some systematic method for observing behaviors where they occur. The method should record and organize the information so that gross screening decisions can be made. Though observation is the tool most frequently used by teachers, its value is decreased if information is not systematized in a usable form.

Screening Instruments

This section offers descriptions of several types of screening devices. These are useful for sorting high and low achievement, performance and proficiency. They also help to identify children who may have a handicap or learning problem.

Profiling

A systematic method of assessing and developing a graphic representation of the whole child should be a tool all teachers can use. In addition to assessment of performance and achievement, this tool may assist the teacher in programming for one child or for an entire classroom. Profiling offers an opportunity to point out and document deficiencies and strengths. There are many ways to profile a child's skills. This section shows one format which may be used or modified to fit specific needs.

IDENTIFICATION: Observation of Behavior

Every classroom teacher should have some systematic method for observing behaviors where they occur. The method should record and organize the information for screening purposes. Though observation is already the tool used most frequently by teachers, its value is decreased if information is not systematized in a usable form. It can be used most productively as a screening device, however, if the pitfalls inherent in observation are avoided.

Behavior and academic performance deviations can be and often are recognized before they have been verified by any standard procedure. Like formal testing, systematized observation can verify information. Unlike formal testing, observation has the advantage of allowing for a realistic evaluation in a natural academic or social environment.

To make observation a tool for screening and a base for comparison of performance improvement, the observation procedure must be taken two steps further than mere "recognition." Behavior or performance should be recorded as it actually happens; the significance of the behavior should be ascertained by comparison of that performance frequency or duration to the total performance of the observed behavior in others.

A description of the actual events should be collected by use of a stable or unchanging system. This system should convey the same meaning each time it is used and to anyone who reads the account. The description should be recorded so that the sequence of events is clearly stated and can be remembered. By being systematized and by recording the events, the target behavior can be verified and the performance can be clarified and substantiated.

This organized observation process can become a prime tool for verification of target behaviors. When a teacher suspects a behavior and requests diagnostic or intervention assistance, verification of that suspicion is an initial step for both diagnosis and intervention. Non verification of the suspicion provides an opening for potential on-the-spot inservice experience for the teacher. As the teacher receives instruction and gains skills in methods of observation, the responsibility of identification and screening is minimized for the trainer.

Systematic Observation of Behavior (SOB)

There are many observation systems already developed. Each scale is designed to gather certain kinds of information. They are of value to the potential user to the extent that they gather the kinds of information the user needs. The user may find it more valuable to adapt an existing method to gather more appropriate information or to start from scratch and create a method more suitable to the specific needs.

The Systematic Observation Behavior (SOB) was developed by the Rocky Mountain Regional Resource

Center to gather detailed, educationally relevant information which could be observed in the classroom. Other instruments did not seem to have the capacity to record all the selected behaviors and the sequence in which they occurred. By focusing on the antecedent behavior, the target behavior, and the consequent behavior, the SOB, is adaptable for initial screening and identification of problem behaviors. For that reason the SOB will be used as an example of an observation recording system in discussions that follow.

The SOB is an informal screening device, useful for identifying those elements in the child's environment that may affect performance. As in formal testing, a "diagnostic" profile is compiled. Unlike formal testing, the child is observed in his natural academic or social environment and it requires that the observer do more than just observe. Effective use of the SOB requires adherence to the preliminaries, the observation and the follow-up.

Preliminaries

Preliminaries are initiated by a referral. The first consideration should be whether or not the SOB is an appropriate device to use. This decision can be made by asking three questions:

1. Does the nature of the referral reflect the teacher's lack of information of the child's difficulty in a school setting and/or a need for confirmation of the observation?
2. Does the referral focus on observable interactions and behaviors?
3. Does the referral require a behavioral as opposed to an academic appraisal of the child's performance?

If the SOB is appropriate for use (if any of the above answers are yes), the referral is the basis for an objective observation. Following are examples of referral questions from teachers:

1. "Is Peter leaving the room when Warren picks on him?"
2. "When and why does Ralph become rebellious?"
3. "What are the things that occur before and after I give Robert an assignment he refuses to finish?"

4. "What does Glade do behind my back?"

In the preliminary meeting, the initiator of the referral and the observer review a list of possible behaviors and decide what key behaviors or interactions to look for during the observation. The General Survey Form, Figure 1.1, is useful as a checklist for planning behaviors to be observed. A time and place for the observation must be decided upon. The preliminary conference should also be used to schedule a follow-up discussion between observer and initiator. This should occur as soon after the observation as possible. With the objectives, time, place, and follow-up discussion established, the observation can now be made.

Observation

The observer's entry into a classroom is dependent upon the teacher's style and the class's experiences. The observer may ask the teacher:

1. How should the class be approached?
2. Should the teacher prepare the class for an observer?
3. Where is the most appropriate place to accurately observe?

The observer comes prepared with observational tools -- the code, coding paper, pencils, clipboard, and a timing device (optional).

The observer establishes himself comfortably in the classroom. Previous to coding, the observer takes time to collect a general picture of the classroom. The observer should determine what activity is in progress, who is interacting, and where the target child or children are located.

Two difficulties may arise:

1. Is the target child aware of the observation and, if so, altering his behavior? If this occurs, a decision is made to continue observing with this factor in mind or to discontinue.
2. Is the activity or information to be gained relevant to the referral? Depending on the above difficulties, the observation may be continued after a time interval or on a later date.

☐	A	Accepting
☐	AA	Assumes authority
☐	AK	Acknowledge
☐	AK_	Teacher ignores
☐	AMP	Amplifying
☐	ANS±?	Answer
☐	AR	Accepting with reinforcement
☐	ARC	Arguing, disagreeing
☐	BB	Blackboard
☐	BK	Book
☐	BOT	Back on task
☐	BO	Blaming other
☐	BS	Blaming self
☐	CA	Calling for attention
☐	CAU	Caution
☐	CC	Call for confirmation
☐	CHB	Chair behavior
☐	CL	Clues
☐	CNT	Counting aloud
☐	CO	Concern
☐	CMP	Complaining
☐	CRL	Crawling
☐	DB	Describing behavior
☐	DC	Describing consequences + −
☐	DEP	Dependency
☐	DK	Don't know
☐	DKP	Don't know - probability
☐	DNI	Denying responsibility
☐	DR	Directing to repeat
☐	DSK	Desk
☐	DSP	Disparaging another
☐	DSPO	Getting other to disparage
☐	DUN	Done
☐	DYK	Do you know
☐	ERA	Erasing
☐	ENC	Encouraging
☐	EXCL	Exclusive
☐	FG	Facial gestures
☐	FLR	Floor
☐	GA	Giving answer
☐	GA?	(In form of question)
☐	GR	Group response
☐	GRP	Group to perform
☐	GT	Get to it
☐	HD+	Head
☐	HLP	Ask for help
☐	HT	How to
☐	HU	Hand up
☐	I	Information giving
☐	INT	Interpreting
☐	IS	In seat
☐	KD	Kidding remarks
☐	L	Subject looking
☐	LAG	Look again
☐	LAG?	(In form of question)
☐	LD	Leading verbal recitation
☐	MT	Me too (to be included)
☐	MU	Music
☐	N	Noise
☐	NC	Not correct
☐	ND	Expressing a need
☐	NR	Not ready
☐	NRM	Norm statements
☐	NVS	Non-verbal signals
☐	O	Orienting statements
☐	OA	Offering alternatives
☐	OB	Object
☐	OC	Other child
☐	••	Squinting
☐	A..	Rubbing eyes
☐	⌒	Crying
☐	→	Indicates movement

☐	OS	Out of seat
☐	OT	On task
☐	OT−	Off task
☐	P+	Physical contact
☐	P−	Physical contact
☐	PC	Physical control
☐	PER+	Personal reference
☐	PF	Personal feeling
☐	PL	Playing
☐	PM	Perseverating movements
☐	PNT	Pantomine
☐	POB	Propelling objects
☐	POS	Possession
☐	PPR	Paper
☐	PRP	Preparing materials
☐	PRT	Partial response
☐	PFX	Proximity
☐	PUN	Punishment applied
☐	PW	Physical withdrawal
☐	Q	Question
☐	QA	Can I do this
☐	QC	Recognition or cognition
☐	QCD	Can you do it (ability)
☐	QCL	Question with clues
☐	QD	Divergent operation
☐	QCQ	Consequences
☐	QE	Evaluation operation
☐	QM	Memory (rote) operation
☐	QN	Convergent process
☐	QO	Orienting question
☐	QP	What punishment (group/person)
☐	QR	Rephrase question
☐	QRD	Ready?
☐	QRH	Rhetorical question
☐	QWHT	Do you know what to do?
☐	Q ✓	Check on guessing (process)
☐	QRV	Review questions
☐	RDG	Reading aloud
☐	REM	Reminding
☐	REP	Repeating response
☐	RF	Tangible reinforce
☐	RL	Rolling body
☐	RS	Return to seat
☐	RT	Release from task
☐	RV	Review
☐	S	Symbolic information
☐	SAL	Salutation
☐	SAR	Sarcastic
☐	SE	Self excusing
☐	SH	Shh-h-h
☐	SI	Silent
☐	SN	Saying students name
☐	SQ	Sitting quietly
☐	SO	Speaking out
☐	STP	Stop
☐	ST	Standing by teacher
☐	SV	Sub vocalizing
☐	T	Teacher
☐	T	Teacher checks
☐	TY	Thank you
☐	V+?	Verbalization
☐	VM	Visual motor.
☐	VR	Verbal refusal
☐	WC	Who cares
☐	WDO	Who does it
☐	WDO	Who wants to...?
☐	WHY	Explains why
☐	WHT	What to do
☐	WM	Who me
☐	WND	Window
☐	WY	Will you do this for me
☐	ZZ	Asleep
☐	✓	Asks for check
☐	›	Reflects
☐	‿	Smile
☐	⌒	Frown
☐	~	Laugh

Fig. 1.1

General Survey Form

Follow-up Discussion

After observing, the observer compiles the data and makes an initial interpretation. If he decides useful information has been gained from the observation relating to the original referral and/or the objectives, further interpretation and implications can be drawn.

At the scheduled follow-up discussion, a positive approach to the initiator is advisable. Information should be shared; then joint implications can be made for possible intervention strategies, for reevaluation, for formal assessments, or for further observation.

Intervention Progression

Effective usage of the SOB is dependent upon the appropriate approach to the referral by the observer and application of the appropriate steps. This is accomplished through a progression of decisions, events and evaluations. This progression is explained by the intervention process flow chart in Figure 1.2 and the brief narrative relating to it.

Units of Behavior

Recording of coded behavioral items is practiced during observation most successfully when the observer is readily familiar with both the meanings and abbreviations.

Categorization: For the observer's introduction and ease of learning, units of behavior are classified into ten categories of item clusters:

1. Information
2. Questions
3. Instructional Devices
4. Control
5. Affective
6. Participation
7. Response
8. Self-Improved
9. Other-Involved
10. Miscellaneous

Figure 1.3, Item Clusters, provides a basic display of this organization. The unit behavior

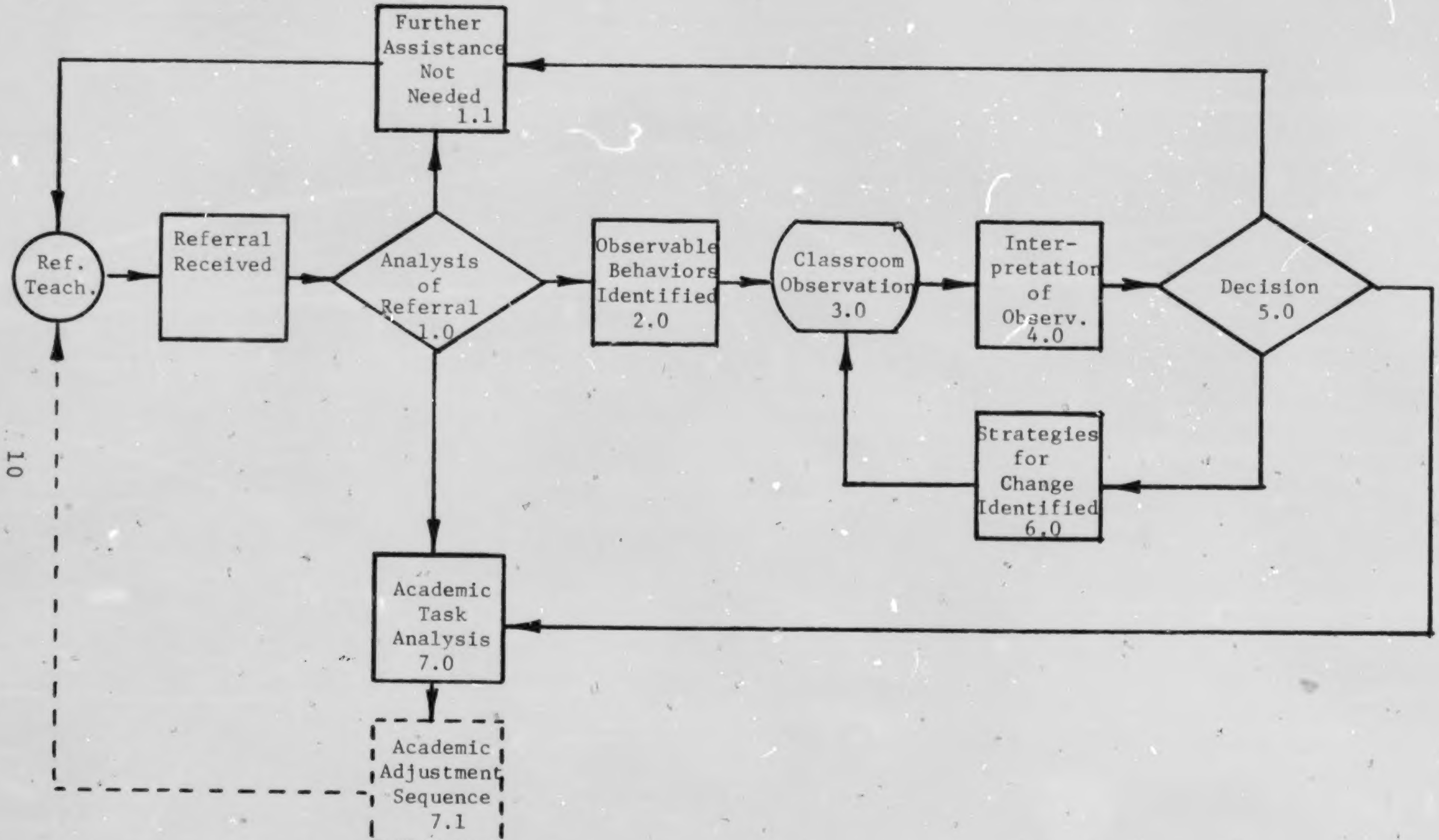

Further Assistance Not Needed 1.1
Ref. Teach.
Referral Received
Analysis of Referral 1.0
Observable Behaviors Identified 2.0
Classroom Observation 3.0
Inter-pretation of Observ. 4.0
Decision 5.0
Strategies for Change Identified 6.0
Academic Task Analysis 7.0
Academic Adjustment Sequence 7.1
10

Fig. 1.2

Flow Chart for Systematic Observation of Behavior

Fig. 1.2 (cont.)

Narrative

Upon receipt of the referral, the following sequence of events occurs:

1.0 Decision

- 1.1 No assistance needed; refer back to teacher
- 1.2 Academic task analysis suggested. Proceed to 7.0
- 1.3 Requires observation. Proceed to 2.0

2.0 Identify behaviors to be observed

- 2.1 Using the General Survey Form (Fig. 1.1) identify behavior referring teacher is concerned about
- 2.2 Arrange with referring teacher times when it would be appropriate to observe

3.0 Observe behavior

4.0 Interpret behavior

5.0 Decision

- 5.1 No assistance needed. Refer back to teacher (1.1)
- 5.2 Academic task analysis suggested. Proceed to 7.0
- 5.3 Strategies for change suggested. Proceed to 6.0

6.0 Identify strategies for change

- 6.1 Select strategies
- 6.2 Implement strategies
- 6.3 Arrange time to observe. Recycle back to 3.0

7.0 Academic task analysis

- 7.1 Arrange with referring teacher appropriate academic adjustment sequence
- 7.2 Follow-up as necessary

1. Information

Amp - GA - I - NC - O - S

2. Questions

DKY - GA? - Q - AQ - QC - QCD
QCL - QD - QCQ - QE - QM - QO
QP - QR - QRV - Q✓

3. Instructional Devices

AK - AR - CA - Cau - CC - Why
CI - DKP - DR - HT - LAG - Wht
LD - OA - QRD - QRH - QWHT -GT
REP - RV - SAL - T - WDO? -
RT

4. Control

A - AA - AK - DB - DC± -
GRP - NRM - PC - Prx - Pun - PW
REM - RF - RT - Sh - SN - STP
BOT - WY - NVS

5. Affective

DIS - CO - Enc - PF - INT - KD
> ☺ ☹ 😀 😧

6. Participation

HLP - HU - L - ND - OT - PNT
SQ - VM

7. Response

PRP - DIS - BO - BS - CNT -
CMP - DEP - DK - DNI - DUN -
MT - NR - (R∵) - PRT - RDG -
SO - VR - (✓) - PW - SE - WC -
WM

8. Self Involved

DD - PM - RL - SV - ZZ - CRL
PL

9. Others-Involved

DSPO - Excl - OS - OT - P± -
PL - POB - ST - POS

10. Miscellaneous

BB - BK - CHB - DSK - ERA -
FIR - HD - IS - MU - N - OB -
OC - PPR - T - WND - → FG -
TY - V

Fig. 1.3 Item Clusters

items within each of the categories are representative of the single common property related to the category.

Although an interrelated system or construct does not exist among the categories, the intent is to cluster the items for economy of use and not to provide a diagnostic or remedial framework by which to interpret the occurrence of single or multiple categories.

Appendix A, the Glossary of Items, provides clarification and definition of both the behavioral categories and the sub-items. The Glossary of Items includes:

1. The abbreviated behavioral code,
2. A definition in statement form, and
3. A hypothetical example of the behavior.

Although the behavioral item may apply to a variety of classroom examples, the observer is encouraged to become familiar with the basic statement theme and to relate the concept to whatever variations may occur. The unit items are applicable to coding specific observations of either teacher or student.

Implementation

Observing: The Systematic Observation of Behavior (SOB) is a tool that allows much flexibility in observing and recording behavior. When a referral is received from the teacher, the General Survey Form should be given to the teacher. Together with the observer, the teacher determines what particular behaviors of the child are troublesome. These then become the behaviors to record. Suppose the teacher was concerned with the following behaviors: out of seat (os), in seat (is), talking or verbalizing (v), with other child (oc), day dreaming (dd), and on task (ot) behaviors. These are the behaviors that would be observed. Whenever other than the above-mentioned behaviors would occur, the observer would simply record it on task (ot) or off task (ot-).

The observer needs to be careful while in the classroom. If it is obvious that the observer is watching a particular child, it does not take long for that child to notice. This may change his behavior and make it difficult to get accurate data. The observer should look around the classroom without focusing his attention on the child. When it is time to make an observation, he then might look at the child out of the corner of his eye or scan the whole class including the student in question. He should never fixate on the child.

Recording Alternatives: The teacher may want to know just how her own behavior affects the behavior of the student. The observer then records the behavior of the student at a predetermined frequency and at the same frequency records the teacher's behavior as it is related to the student. The teacher may be helping another child across the room and that may have some effect on the behavior of the target child.

Systematic recording of behavior may involve several aspects. The observer may want to watch only one student or he may watch up to ten students, recording their behaviors. For example, the classroom teacher may make a referral on one child. The observer then goes into the classroom and records the behavior of the child for a period of about 30 minutes. This will give the teacher and observer a basis for diagnostic and prescriptive information for control of the child's behavior.

Or the concern may center on a group of children. The observer then can list the names of the children in the order that they are seated. He then goes down the list of children, recording their behaviors. When the list is completed he starts at the top of the list again. The names of the students are written down the left hand side of the paper in a sequence that coincides with their seating arrangement. For the first time interval, recordings are made for the first child; In the second time interval for the second child, and soon until the behaviors of all children named are recorded. This process is repeated for about 30 minutes. A summary of each child's behavior can then be made. The teacher and the observer can together determine what child would benefit from an intervention based on the observation of behavior.

How to Record Behavior: The two important elements involved in recording a child's behavior are the behavioral code and the time frequency. Before one can record behavior, he must be familiar with the code, or at least be familiar with the code for the behaviors to be observed. This can be determined by the observer and the classroom teacher. The fewer behaviors observed, the easier they will be to record. The information is written on the Observation Form, Figure 1.4. The numbers at the top indicate the number of time intervals on each line, with the length of the interval determined by the observer prior to observation. The numbers down the left hand side indicate the potential number of children to be observed. When observing one child, disregard the numbers on the left. Each pair of rows are separated by a heavy dark line. The top line is for recording the behavior of the student. When the first pair of rows are completed, start on the second pair of rows, until the page is finished.

The child's behavior is recorded at every specified time interval. The time interval can range from 3 seconds up to one minute depending on the needs of the teacher and the experience of the observer. A longer time interval is suggested for the observer unfamiliar with the codes. The observer can keep track of the time by watching a clock, by counting, by use of an electronic beeper, or a tape recorder that has been prepared in advance to cue the observer at the time interval. The observer should record the behavior that occurs precisely within the time interval. The recording is continued in this manner until the observation form is complete. The observer then summarizes the information in preparation for a conference with the teacher.

Summarizing: The behavior observation data needs to be organized so that the teacher can make some diagnostic conclusions. Without this information it would be difficult to make useful comparisons of behavior of one child over a period of several observational times or to compare one child with another. The number of entries for each different behavior is counted and then recorded on the Summary Chart, Figure 1.5, to determine percent of each behavior to total time involved, directions on the Summary Chart may be followed.

Name____________________ Date________________

Location__________________ Time interval____________

Activity__________________ Beginning time___________

Observer__________________ Ending time____________

NAME	1	2	3	4	5	6	1	2	3	4	5	6
1.________												
2.________												
3.________												
4.________												
5.________												
6.________												
7.________												
8.________												
9.________												
10.________												
11.________												
12.________												
13.________												
14.________												
15.________												

Fig. 1.4

A sample observation form for recording observed behaviors

Name________________________ Date__________ Grade__________

Teacher______________________ Observer____________________

a	b		c		d	e	f
		÷		x 100=			
		÷		x 100=			
		÷		x 100=			
		÷		x 100=			
		÷		x 100=			
		÷		x 100=			
		÷		x 100=			
		÷		x 100=			
		÷		x 100=			
		÷		x 100=			

1. Write the code for all categories used during observation in column a.

2. Write the frequency for each category used in column b.

3. Write total frequency for all categories in column c. Divide number in column b by number in column c.

4. Multiply number in column c by 100 and write in column d. This will give percent of occurence.

5. Write frequency of all on-task (ot) behaviors from column b in column e.

6. Write frequency of all off-task (ot-) behaviors from column b in column f.

7. Total and divide on-task (ot) and off-task (ot-) behaviors by total frequency of all categories. This gives percent of on-task (ot) and off-task (ot-) behaviors.

Fig. 1.5

Summary Chart

Evaluation Form: Percentages of recorded behavior observations should be transferred to the Evaluation Form, Figure 1.6. This form serves two main purposes: a) one can compare subsequent observations to determine if the intervention is or is not effective, b) one can compare one child against another to see if behavior deviates from the norm. Recording instructions are provided with the Evaluation Form.

Observer Development and Practice

Coding Preparation: For the purpose of case study development and completeness, the beginning observer is best prepared by:

1. A gradual approach to learning the behavioral item codes;
2. Conducting child observations or case studies that are initially general, becoming increasingly specific.

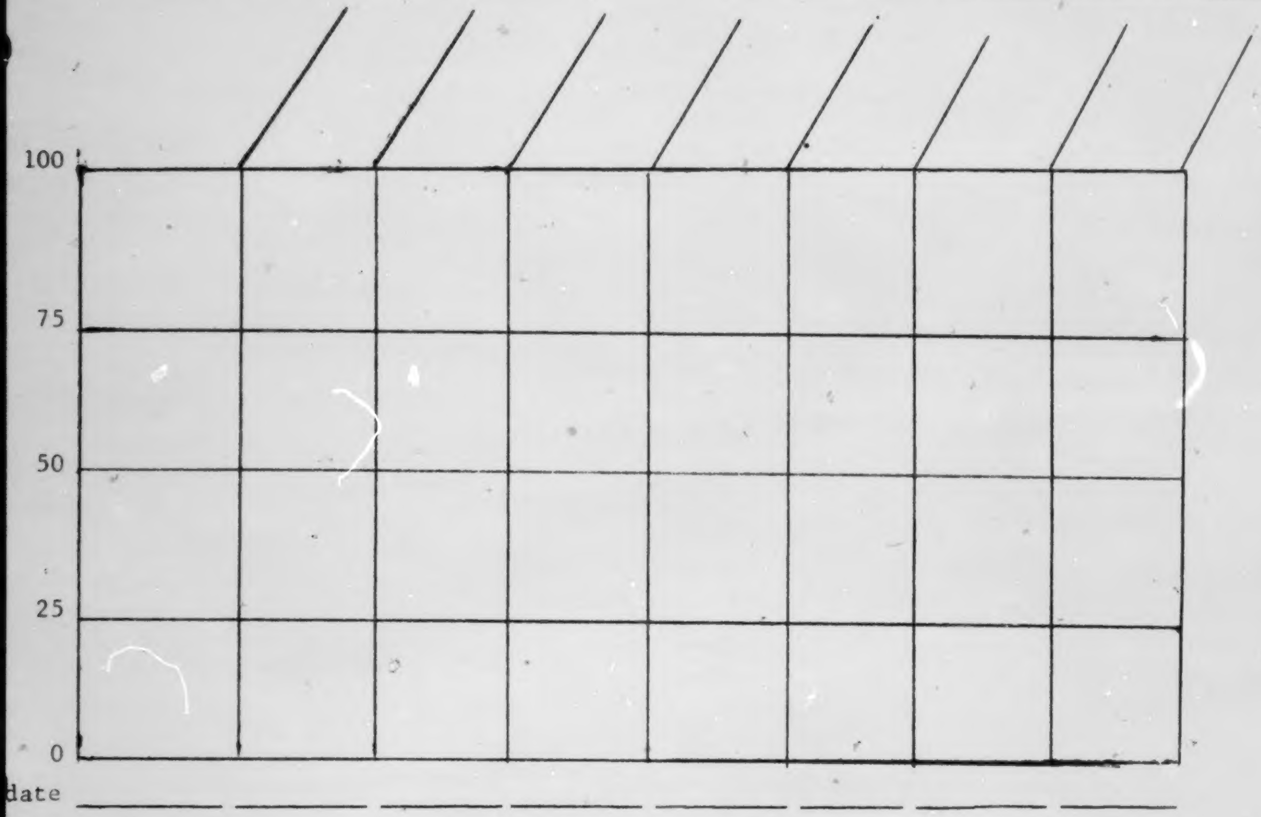
The use of coded items for behavior categories or "clusters" only, is most easily accomplished initially. The basic 10 (Information (I), Questions (Q), etc.), categories of behavior for a single child, and a time interval rate of 10-15 seconds may be comfortable practice conditions, using the Observation Form for a beginning classroom session.

With increased facility, the observer may shift to unit behavioral item recordings with an individual child, and later group, or teacher/child interactions, with reduced time intervals, (5-8 second/recording).

The initial case study should maximally include basic or general information, as:

1. Referral information from the teacher;
2. Description of the setting in which the behavior occurs;
3. The categorical behaviors of the child(ren) recorded in the observation;
4. Questions related to the observation by teacher and/or observer;
5. Preliminary opinions or answers to the concerns.

As the observer achieves greater insight and recording speed with general observations, Name______________________________________Observer__________________



1. Write the code of the observed behavior on the slanted line. The last line is for other behaviors.

2. Chart percentages of occurrences of each behavior observed on the left side of each column. There is room to chart behaviors of 10 different observation times. One at the beginning of the school year and another at the end of each month during the school year.

3. Write the date of the first observation of the first line below the chart. Write the date of the second observation on the second line of the chart. Write each subsequent date on the remaining lines.

Figure 1.6 Evaluation Form

additional case study information may include:

1. Determining objectives for the observation.
2. Selecting unit behavioral item (vs. categorical).
3. Implementing the specific unit-item coding during observation;
4. Making an accurate interpretation and evaluation of the observation.

Figure 1.7, Case Study Development, provides basic guidelines for the aforementioned considerations. Figure 1.8, Case Example 1, and Figure 1.9, Case Example 2, are included from actual observations.

Summary of Systematic Observation of Behavior (SOB)

Rationale to support use of informal observational instrument:

1. Eliminates much formal diagnostic work and/or use of generalized formal batteries.
2. Provides inroads for further exploration through informal diagnosis.
3. Provides shortcuts to evaluate academics, behaviors, and learning modes highly relevant to a specific teacher-child interaction.
4. Gives teachers utility of diagnostic information.
5. Removes stigma of categorization in diagnosis.
6. Allows for transformation to teachable outcome skills.
7. Provides common communication base.
8. Integrates essential aspects of informal diagnosis.
9. Provides factorial scheme of the child in his mainstream environment.

Descriptors that speak to the purpose of the instrument:

1. Presents structure of multi-dimensional application.
2. Provides a visual representation of what is observed.
3. Alleviates communication stress with teachers.

Behavioral Items

Cluster/category--single child

Cluster/category--group or teacher/child

unit--single child

unit--group or teacher/child

Case should include these items:

1. Referral
2. Objectives for observation
3. Selection of observation categories (units)
4. Setting
5. Categorical behavior codes of the child(ren) during observation
6. Specific item coding
7. Interpretation
8. Questions
9. Answers

General Case Studies should include information only in items 1, 4, 5, 8, and 9.

Specific Case Studies should include information in items 1 through 9.

Figure 1.7 Case Study Development

Case Example 1.

Lisa

Setting: a resource teacher and Lisa are working on a classification task. The material is a workbook. The task is to select, from four alternatives, three pictures that may be classified on the basis of similar functional uses for the objects pictured.

The S.O.B. shows the following:

1. Out of ten responses, Lisa receives verbal approval from the resource teacher for three responses.

2. On the three approved responses the resource teacher asked check questions to which Lisa responded with incorrect or ambiguous verbalizations.
   Example: Resource teacher, "How did you decide on those three?"
   Lisa, "They weren't alike."

3. A later sample (one week later) shows that Lisa's success rate remains the same, but that the 3 successes are now in response to different items, i.e., items passed during the previous work with the same material were now failed.

4. Adjusting the questioning pattern of the resource teacher so that Lisa was verbally reinforced for her correct selections before the check question was asked, resulted in a complete change in Lisa's response pattern, i.e., Lisa would not give incorrect or vague responses when check questioned on prior correct choices.

5. A reversal of the resource teacher's questioning pattern (back to check questions without verbal reinforcers for prior correct selections) was accompanied by incorrect or vague responses from Lisa in response to check questions.

Q	AQ
Ans-	Ans+

Fig. 1.8

Case Example 1.

Case Example 2

Cory

Setting:	Regular classroom, about 30 children, one teacher.
Task:	Copying paragraphs written in cursive from the blackboard.
Task Requirement:	Letter formation accuracy...within reasonable time limit.

SOB results indicate for the baseline observation:

1. Percentage of LBB (subject looking at blackboard) during 5-second intervals in comparison to percentage rate of vm (visual motor) was 92% to 8%.

2. Only three sub-categories were utilized during the observation, lbb, vm, (which suggests that on-task time was close to 100%.

3. A check of the child's product showed that most letters were recognizable but that spacing between letters was irregular.

4. At the teachers $\boxed{\text{RT}}$ all children were at task completion except Cory.

5. Two months after an intervention program was instituted, the percentages of lbb and vm for most 5-second intervals during an observation on similar copying tasks were lbb=42% and vm=58%. In addition Cory was at a task completion when the teacher gave the $\boxed{\text{RT}}$ signal.

   A comparison of the child's product at the post intervention point to his pre-intervention product showed an improvement in spacing of letters as well as an increase in the number of required responses completed.

Figure 1.9 Case Example 2

Name Cory

Location

Activity

Observer

Date

Time interval

Beginning time

Ending time

1	2	3	4	5	6	1	2	3	4	5	6
lbb	lbb	lbb	lbb	lbb	lbb	vm	Lbb	lbb	lbb	lbb	vm
lbb	vm/☹	lbb	lbb/☹	vm	lbb	lbb	lbb	lbb	vm	vm	lbb/☹
lbb	lbb	lbb	vm	lbb	lbb	lbb	vm	lbb	lbb	lbb	vm
lbb	lbb/☹	lbb	vm	lbb	vm	lbb	lbb	lbb/☹	lbb	vm	lbb
RT											

Figure 1.9

(continued)

Name Cory Date ________ Grade ________

Teacher ________ Observer ________

a	b		c		d	e	f
166	36	÷	53	x 100=	68%	36	
VM	12	÷	53	x 100=	23%	12	
☹	5	÷	53	x 100=	9%		
		÷		x 100=			
		÷		x 100=			
		÷		x 100=			
		÷		x 100=			
		÷		x 100=			
		÷		x 100=			
		÷		x 100=			

1. Write the code for all categories used during observation in column a.
2. Write the frequency for each category used in column b.
3. Write total frequency for all categories in column c. Divide number in column b by number in column c.
4. Multiply number in column c by 100 and write in column d. This will give percent of occurrences.
5. Write frequency of all on-task (ot) behaviors from column b in column e.
6. Write frequency of all off-task (ot-) behaviors from column b in column f.
7. Total and divide on-task (ot) and off-task (ot-) behaviors by total frequency of all categories. This gives percent of on-task (ot) and off-task (ot-) behaviors.

Fig. 1.9

(continued)

4. Provides highly useful inservice tool instrumental to teacher self-assessment and/or behavior change.
5. Provides numerical basis for quantitative data for pre- and post-testing.
6. Yields information relevant to the reinforcement and expansion of teacher and observer skills.

IDENTIFICATION: Screening Instruments

The intent of the screening process is to gather together all known information about a child, add to that information missing links, and from all the systematically collected data, make a well documented assumption. The assumption might be that the child is functioning adequately, above the expected level, or below the expected level. It is very important that screening be continuous to detect as early as possible an educational or personal problem. Decisions can then be made to prevent a problem from growing, to correct that problem, or to remediate the problem. If the problem is outside a teacher's jurisdiction or realm of knowledge, the screener has documented information with which to make a referral to the proper source.

For descriptions of common handicapping conditions, see Appendix B.

Observation has already been presented at one possible mode of screening. The two following methods for locating potential learning or behavioral problems are informal and formal testing.

Informal Instruments

Screening instruments designed by teachers to assess a child's strengths and weaknesses in designated areas can be convenient and useful measures. Such devices are called criterion-referenced tests. These differ from formal, or norm-referenced tests in that they are designed to determine how a child functions within a set of criteria determined by the teacher. Normed tests, on the other hand, assess a child's performance in relation to standardized expectations; for example, whether the child is functioning like other children his age or grade level.

Informal screening often supplies specific information needed by a teacher more easily and earlier than a standardized test designed for a general audience. In addition, informal screening information can be used to create a total picture of a child's observed behaviors. It is an excellent tool to use in preparing a developmental profile for a child, as detailed in the next section of this chapter.

Following are some suggestions for teacher-made tests which may be used in place of or along with more formal instruments.

Motor Coordination

1. Gross Motor
    a. observation on playground
    b. observation in a particular activity that requires much coordination such as dodgeball
    c. defined obstacle task such as: climb through the monkey bars, walk with hands across the high bars, skip around the swings, hop through the tires, etc.
    d. "Simon says"
    e. Motor rating scales
2. Fine Motor
    a. observation of writing exercise
    b. evaluation of writing
    c. defined task for copying, cutting, stringing and joining of objects

Social Maturity and Interpersonal Relations

1. Observe daily responses and interactions
2. Set up at situation to observe
    a. have child introduce someone new to principal
    b. put child in strange or unknown group of children
3. Design oral or written test of "what to do if . . ."
    a. you broke your bike away from home
    b. you were lost
    c. someone new comes to school
    d. you were accused of something you didn't do
4. Behavioral rating scale
5. Self esteem inventory
6. Socio-gram

Speech Development

1. Observe and compare to other children in class
2. Give a list of words to read
3. Have the child repeat a nursery rhyme
4. Give the child the opportunity to talk into a tape recorder in a room by himself

Language Development

1. Observe interactions with the class
2. Make anecdotal records on
   a. how he asks questions
   b. when and how he reports the events in his life
   c. his use of words
3. Ask two children to sit in a corner and find out as much as they can about each other. Consider:
   a. length of time spent
   b. extent of information
   c. type of information
   d. how information was reported
4. Have the child write, tell, or tape a story that will last three minutes; establish criteria for acceptable grammar before you evaluate

Reading

1. Have child read to you from basal reader of each grade
2. Give an informal test such as Gray's oral readings
3. Give the child word lists from each level of reading (1-6) and set a criteria for acceptance (80% accuracy within 2 minutes)

Arithmetic Reasoning

1. Ask questions of "more or less"
   a. if I have spent all of my money and you haven't spent your money, will I have more or less?
   b. after giving Jimmy 6 of my 94 baseball cards, Bill 9 of my cards, and John 8 of my cards, when they each had 15 before, who has more than me? Who has less?
2. Use algebraic formulas.

Arithmetic Computations

1. Keep a progress check on word done in class

2. Give a test of facts for all functions
3. Design a test after task analyzing all of the mathematical steps the child should have at the present time

Spelling

1. Give oral spelling tests from words used in that grade book
2. Give a different list of words and have child sound them out
3. Ask the child to write every word he can think of to write; decide on criteria before you evaluate
4. Make a test that selects five words from a spelling book or reading book from each grade level

General Information

1. Observe the child in comparison to his classmates
2. Design a test of word meaning from easy to hard
   a. (1) orange . . . (15) stoker
   b. find the class average and plot the child accordingly
3. Ask questions about:
   a. the neighborhood
   b. television
   c. the school
   d. the government, etc.
4. Have the child explain how something works:
   a. cooking
   b. a clock
   c. a conduit

Mobility

1. Give the child an errand to run, observe how efficiently it is done
2. Give the child a map to follow, such as in a treasure book
3. Observe how he moves around school and the degree of his confidence

Vision

1. Observe his classroom behavior when writing, walking, or talking to someone. Check:
   a. facial expression
   b. distance from object
   c. spatial orientation

2. Make a screening device that is a simplified version of Snellen's; include color discrimination

Hearing

1. Observe the child in classroom environment
2. Put a story on a tape recorder. Use earphones, and record at what volume the child indicates he can hear and at volume he is uncomfortable
3. Whisper numbers or words twenty feet from child (checks high frequency)
4. Bring watch closer to ear until child reports hearing sound

---

Formal Instruments

When time or expertise is not available for teacher-made criterion-referenced tests, formal, printed tests may be used for screening. There are many such tests on the market and available for use. Several of these are listed and described on the following pages. When using standardized tests, be sure to keep in mind that these instruments are based on norms from samples of large numbers of children tested. If you want to assess a particular competency in a child according to some specific criterion, a teacher-made test will give the most accurate results.

IDENTIFICATION: Profiling

Children are a combination of abilities, potential, and proficiencies. The way we as educators evaluate children is often directly related to our own priorities of acceptable behavior and performance. The "average" or near normal child stands a better chance of being accepted by his teachers and finding some level of success. Some children appear to be relatively normal, or have acceptable behavior, but for some reason do not succeed. The discrepancy occurs because it is difficult to assess the total child and disregard personal priorities and judgments concerning acceptable behavior.

A systematic method that would reveal a total picture of a child should be a tool for all teachers because it is crucial in assessing the child's performance and achievement. Additionally, it assists the teacher in programming relevantly and evaluating the child's progress. A total picture of a child is the first opportunity to spot a warning sign that the child may have a disability or a problem and to document the information. It is with the early recognition of the warning sign that further problems may be prevented, that a deficiency may be corrected, and that disabilities can be remediated.

One such systematic method of developing a summary of the whole child is the profiles developed by Samuel Kirk. Since teachers have been accepted by many educators as the primary source for recognizing a potential problem, the profiles make use of teachers' experience and ability to observe the child in various settings, to recognize how he interrelates, and to see how he performs in relation to other children his age. Judgments made by the teachers are not expected to be precise--their task is to screen information, document it, and decide when further investigation should be initated.

There are two profiles used by Kirk.* The first uses age and grade equivalents as the basis to show developmental differences, the second assesses each category in the profile according to a simple level or proficiency rating. The following discussion will explain each of the profiles and their components, how to assess the components, how to graph the profile, and finally, how to interpret the graphed profile.

Kirk's Profile

Profile I -- Age and Grade Equivalents

This profile uses age and grade equivalents to indicate expectant age level or grade level of development, performance, or achievement (see Figure 1.10). Age equivalents and the corresponding grade equivalents are listed on the left, and across the top are listed physical descriptions, performance estimates, and achievement approximations describing areas to be assessed for each child. These are assessed factually--by observation, by informal screening

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*Samuel S. Kirk, Educating Exceptional Children, 2d ed., Boston: Houghton Mifflin Co., 1972.

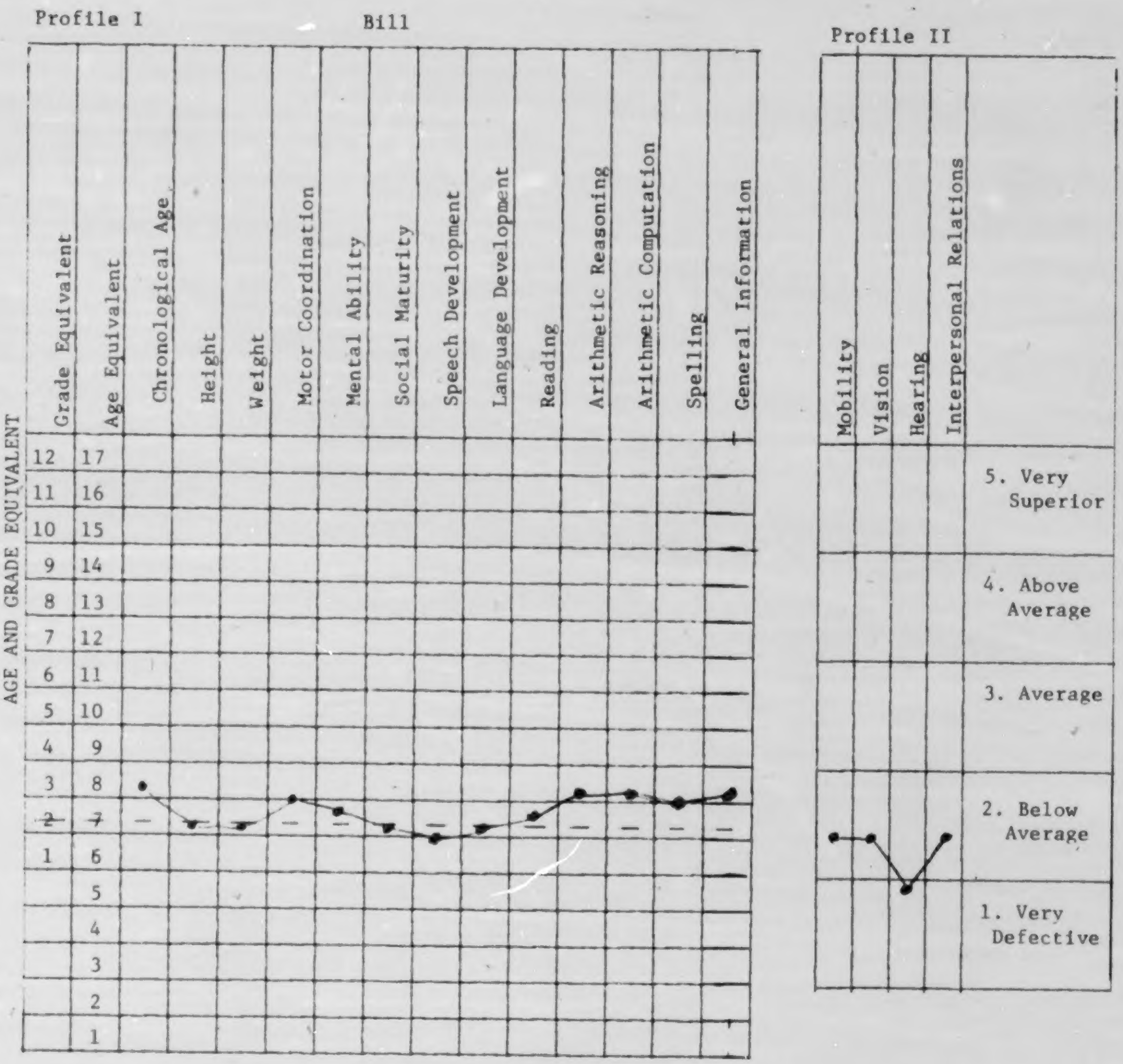


Fig. 1.10

Example showing child data on Kirk's profile forms tests, or by formal devices that offer a structured score. They are then plotted on the profile by a peer comparison, an age score, or a developmental scale.

Methods for assessment and plotting can best be described by assessing one child. The profile will be discussed by examining the assessment criteria. Each area which is not a definite factual category has been defined. In addition to the definition, a three part summary is included for quick reference.

"A" refers to the type of information assessment. The information is either factual (such as height or age), decisional (such as reading).
"B" refers to the method that is used to plot the information on the profile, age, or grade equivalency or proficiency level.
"C" refers to the possible methods of measuring the abilities.

A case study will be used in coordination with the explanation to help clarify assessment and plotting of a profile.

Bill is in the 3rd grade and is 8 years 2 months old. His teacher was concerned about his overall performance and decided to do a profile on Bill to help pinpoint his problem.

The Profile

Chronological Age: Factual information is retrieved from personal file. Bill is 8 years and 2 months - Plot Bill's first dot slightly into the box for 8 years $\boxed{8.}$ The bottom line denotes the start of a new year. So when Bill is 10-years-old, he would be plotted right on the 9 line.

This mark established the criteria for Bill's comparison with his own development of class peers.

Bill is in the third grade. His age and grade equivalent correspond.

Grade	Age
3	8

Height and Weight: 1) Factual information; 2) plotted by comparison to expectancy developmental level; and 3) measured by use development chart or class comparison.

Bill is 4 feet tall and weighs 52 pounds. A look at standard growth charts shows that an average eight-year-old boy should be 4 feet 2 inches tall and weigh 58.2 pounds. Bill is slightly behind in his expected development.

His height and weight are at the seven-year-old level according to a standard growth chart. His graph would be plotted like this:

Chronological Age	Height	Weight
8 .		
7	.	.

Interclass comparisons may be useful to the teacher. Bill's teacher weighed and measured all the boys in the class and found the class average. The average height was 4 feet 1 inch and average weight 54 pounds. The class was below the average on the chart. Bill would still be below the class average but the difference is not as significant as indicated by the development chart. The teacher would still plot all the boys below their age line. Later she may find the norm inappropriate or that her class of boys are, in fact, deficient in their height and weight development.

Motor Coordination: This is an assessment of the degree of fine and gross motor coordination. Tasks are performed by the child in relation to his developmental stage:

Teacher judgment
Plotted by comparison of age-peer
Observation or screening devices found in Section E of Appendix C (Appendix C contains brief descriptions of various screening instruments.)

Bill writes legibly and with letters formed properly. He has no difficulty in performing any fine motor tasks such as cutting with scissors. He can catch, throw, and run with no difficulty. He has average coordination.

Bill's teacher could have set up defined tasks such as those listed in Section E, Appendix C, and make a judgment about his performance on those tasks. The Barsch twelve dimensions are developmental and would define specific abilities or disabilities that would be helpful for program adjustment, if needed.

Mental Ability: This evaluates the average ability for a particular chronological age, based on normative studies or teacher assessment:

Standard score
Plotted by conversions to mental age
Intelligence test or make estimation

Bill has never had an intelligence test. His teacher cannot plot a true measure on his profile.

However, his teacher may decide to make a judgment and estimate where he falls in relation to other children. She may say he needs to have directions repeated several times before he can learn or grasp an idea. He describes objects with one dimension while most of the children are beginning to talk in two or three dimensions. She may then plot an estimate. The below-average mark is not an absolute decision, but a sign that the teacher has some question about his mental ability. This could be an indication that an intelligence test should be administered to find out why it takes so many repetitions before learning. Administration of the Slosson Intelligence Test shows his IQ to be 94. This may be converted to a mental age of 7 years 7 months.

	MA
8	
7	
6	?

The teacher can now change her estimate and make a definite mark. His mental age is still within an average range. Deviation for all areas one-year above or below actual age is still considered within the average range.

Social Maturity: This is an assessment of the appropriateness of a child's behavior for his age.

Decisional: This is plotted by age. Use observation or screening devices from section F, Appendix C. Bill behaves much like his classmates. He does not generally over-react or under-react to situations. When a joke has been told he will laugh, but not tumble to the floor like another boy in his class does. He responds within the class limits and rules.

Social Maturity

8	.

Speech Development: Speech development is assessed by the child's articulation, rhythm, pitch, and voice quality.

Decision or age score
Plotted by age
Use teacher-made test or a screening device from Section G, Appendix C

Bill's voice and words are muffled. His "voiced sounds" are nasal. Sometimes his sounds are in a monotone. The teacher plotted his speech development below the other children.

Speech

8	
7	
6	.

Another child's speech that was more infantile than his peers would have been plotted below average as well. If the speech was less infantile or spoken more precisely than the other children's speech, it would be plotted above the expected level

Language Development: This is assessed by the comparative ability to speak, use, and sequence sounds for use in interpersonal communications:

Decisional
Plotted by age

Use observation or screening device from Section G, Appendix C.

Bill's classmates and teacher understand him. His teacher notes that unlike his peers, Bill often eliminates verbs in sentences and drops some words off the end of his sentences. Otherwise, his language usage or his ability to communicate is similar to other children in his class. However, his graph is marked below average because of his tendency to drop his verbs and sentence endings.

8	
7	.

Language

Reading: Reading is assessed at a general reading level for word knowledge and comprehension. A grade equivalent score is given which is marked on the screening profile.

Test standard score
Plotted by age-grade equivalency
Use screening device from Section D, Appendix C, or teacher-made devices

All students in Bill's school were given the Metropolitan Achievement Tests. Bill's reading score was "52" which is a grade equivalent score of 2.6.

Grade Equiv.	Age	Reading
3	8	
2.6	7	.

Bill is slightly below his expected level.

Arithmetic Reasoning: This is an assessment of the ability to problem-solve mathematical or practical situations:

Measure by standard score or class average
Plotted by grade-to-age equivalency
Use teacher-made device or a screening device from Section D, Appendix C

Bill's score on math problem-solving on the Metropolitan Achievement score was 60 or slightly above 3.0 grade equivalency.

Grade	Age	Arithmetic Precision
4	9	
3	8	•

Remember this line denotes the beginning of third grade and 8 years of age.

Arithmetic Computation: This assessment is made on the basis of performance in arithmetic functions of adding, subtracting, multiplying, and dividing.

Measured by standard score or class average
Plotted by grade-age expectancy
Use screening device from Section D, Appendix C or a teacher-made device

Bill scored a 60 on the Metropolitan subtest for Mathematical Computation, which is a grade equivalent of 3.3. His teacher gave one of her own computation tests. Bill got 24 out of 25 problems correct. The average score was 20 correct for the class. Bill is just above-average in his arithmetic computation.

Grade	Age		
4	9		Computation
3	8	•	

Spelling is assessed as an academic skill requiring phonetic knowledge and/or memory.

Measured by standard score or class average
Plotted by grade to age
Use screening instrument from Section D, Appendix C, or teacher-made devices

Bill had a 2.8 grade equivalent score on the Metropolitan subtest.

Grade	Age	Spelling
3	8	
2	7	•

Another way of getting this score could have been a spelling test using words from different grade levels of spelling and finding the proficiency level.

General Information: This assesses the extent of the child's knowledge of events and things around him as compared to other children his age.

Decisional
Plotted by age
Use teacher-made device or observation

Bill competes with his classmates for naming the baseball player's names. He can tell you a complete television lineup for any evening of the week. He knows his way home, the names of surrounding and neighbors. His general information is about the same as his classmates.

General Information

3	8	•
2	7	

That completes all the categories in Profile I. It forms a rough sketch of how Bill compares to his age and grade level expectancy. Also, it shows that within a child there are growth or developmental differences. (Interpretation will follow the discussion of Profile II).

Profile II - Proficiency Level

The second profile is called the proficiency profile. Here, each category is assessed by a simple level or proficiency rating. Age and grade equivalency comparisons assume that some abilities are developmental and that performance ability should increase with age or exposure. This section of the profile assesses those categories that do not necessarily change developmentally. Vision and hearing are either normal or abnormal. Mobility and interpersonal relations are proficiencies that are learned by degrees and that degree is average, above average, or below average. These categories, then, are rated: very superior, above average, average, below average or very defective.

Mobility: Mobility assesses the degree and speed with which a child is capable of moving from place to place. The assessment is made by comparative observations.

Vision: This is primarily assessed informally by the teacher's observations, and secondly, by school screening or those screening devices listed in Section H, Appendix C.

Hearing: Hearing is assessed by informal teacher-made tests or by screening devices such as those listed in Section G, Appendix C.

Interpersonal Relations: This is an assessment on the basis of how well a child gets along with others and the manner or way he approaches others. It is assessed informally by observation or social screening devices such as those listed in Section F, Appendix C.

Bill on the Proficiency Level: From the age and grade equivalency profile, we remember that Bill moves freely about his neighborhood. He has average mobility. The teacher has noted that Bill can sit anywhere in the room and still copy from the board. Apparently he has adequate visual acuity. Why then, if his intelligence is in the average range, does Bill need to have things repeated so frequently? An assumption is made that his hearing may be below normal.

On interpersonal relations Bill had an average proficiency. Bill's profile is complete. The actual plotting would have taken a teacher just two five-minute sessions. To profile an entire class, it would take about three hours.

Those three hours would establish behavioral baselines that would initiate continual pupil evaluation.

Intrepretation of a Profile

The interpretation of a child's profile is more an evaluation of a child's development in relation with his peers. Much of a profile is done by using a teacher's judgment. The results should be viewed accordingly, allowing for judgment error.

Check the Profile

1. Make sure every component has been plotted.
2. Connect all points on the equivalent profile separately from the connecting points on the equivalent profile separately from the connecting points on the proficiency profile.
3. Put a solid red line straight across the equivalent profile exactly one year above and one year below the child's age point. This denotes the acceptable or average range.

Evaluate the Points

1. Look first at the total profile.
   Are all the points inside the red lines?
   If so, the child appears to be functioning as you might expect.
   He has few differences in his inter-growth pattern.

   Are there a few points outside the red lines?
   If they are above the red line, abilities are indicated.
   If they are below the red line, developmental lags are indicated.
   If they are both above and below the line, you have profiled a very inconsistent child who will require further investigation or you might have miscalculated.

2. Look next at the points above the average range--the abilities.
   Evaluate these points and check their consistency.
   Does it appear that he has an advanced mental ability and advanced general knowledge?
   Are his language and speech areas similar?
   Does his motor coordination coincide with advance height and/or weight?

3. Look at the points below the red area. These suggest developmental lags that might call for further investigation. Below average proficiency should be considered as well.

   If there are some questionable results or judgment errors, further investigation may be necessary:
   Diagnosis (ability or disability testing)
   Re-profiling following further observation (continual anecdotal records)
   Program adjustment
   Talk with child and/or parent
   A look at your reason for placing that point below average (is this a judgment error?)

Look for Patterns Between Below-Average and Above-Average Performance and Cross-Check with the Proficiency Chart

Some relationship between categories may exist.

1. If height and weight are slight, motor coordination is often similarly affected. If very slight, Proficiency of Mobility is often affected.
2. Mental Ability is related to general information. It can affect academic performance. A high mental ability does not, however, assume high academic performance.
3. Social Maturity is often, but not always related: If the mental ability is significantly below average; if performance academically is low; if interpersonal relationships are low; if the child has difficulty learning or speaking.
4. Low speech and language sometimes affect:
   Interpersonal relations
   Reading and spelling
5. Looking at the proficiency chart, a sensory handicap is directly related to intelligence, but low intelligence is not inherent to a sensory handicap.
   Below average vision could affect areas on the equivalent graph, depending on the level of intelligence. Motor coordination is particularly affected.
   Below average hearing could affect speech and language; degree is dependent on age of onset.

Be Cautious

1. Grade equivalency can be confusing.
2. If the child is 8 and in the second grade, expect second grade performance although third grade is the corresponding grade.
3. Relationships of components on the profile tend to pull each other to form a cluster of related proficiencies.
4. Some additional information is often important in making an assumption. However, this is what will be described in Prescription as personal information. Information should be gathered selectively. If a child is not performing adequately in motor activities, it may be helpful to know that he was on crutches for two years or first walked when he was five-years old.

What is the Problem?

1. If the child is within the average red area continue the program but recheck at the first indication of a change.
2. If the child has several areas above the red area, work with these abilities.
3. If the child has several below the red area:
   Look for patterns. Check for consistency and inconsistency,
   Document your information further,
   Make a judgment about the possible problem.
   Check the Kirk profiles for each exceptionality and look for clues,
   Check your list of manifestations,
   Request diagnostic assistance,
   Re-structure your program immediately to teach to his strengths and help remediate developmental lags.
4. If the child is extremely inconsistent:
   Re-profile
   Document your information
   Request diagnostic assistance
5. In all areas:
   Decide what is in your jurisdiction.
   Is this a problem you fully understand?
   If you understand it, do you know how to deal with it?
   Is this a problem that calls for a medical doctor?
   Is this a problem that your principal should deal with?
   Is the educational problem one the special education in the school can treat?

6. Make some assumptions about your class. Is the class consistent? Why? Is the class inconsistent? What can you do about it?
   A. If the class is all in the normal range: Look carefully through the year for some possible changes.
      Be cautious. Total consistency is unlikely to happen for every ability for every child.
   B. If several students are below or above the normal range in the same area: Structure your class to meet their needs. Check your acceptance of that behavior or performance.
   C. Continue to evaluate your class. Remember that at one time only a few discrepancies will need further investigation.

The following is an example of interpretation of a profile. The information plotted throughout this section has been used.

Most of Bill's age equivalent profile is slightly below average. He is in the third grade doing some third-grade work. He is smaller than the other children and perhaps not developing as quickly.

One warning sign emerges. His speech development is just outside the average range as are his hearing proficiencies. Comparing this with Kirk's Profiles, this type of pattern occurs in an auditorily handicapped child. This is an indication that there may be some hearing loss or a hearing infection. The parents should be consulted and further diagnosis should be made.

The teacher, meanwhile, should adjust her teaching accordingly, making sure Bill is in a position to hear all happenings in the classroom. Note that this information is summarized on an Assumption Sheet, Figure 1.11. The sheet is used to outline what factors should be considered when evaluating a profile.

When to Profile

A screening profile is the first step in recognizing an instructional or behavioral difficulty. To be a valuable tool, this method should be used for each child in the class at the beginning of the school year. Plotting most of the class would take perhaps two five-minute group # "Example""

Assumption Sheet

case # Bill Grade: 3rd Age: 8 Corresponding - yes

1. Areas above the average range

   nothing above average range

2. Areas below the average range:

   speech development and hearing

3. Patterns or clustered areas that -

   a. pull together above average

      none

   b. pull together below average

      hearing loss could affect muffled speech

4. Assumptions

   Hearing appears to be defficient

5. Decision (next course of action)

   a. Parents should be consulted and asked to have his hearing checked.

   b. Immediate classroom adjustment needs to be made, so that Bill can hear class proceedings.

Figure 1.11 Assumption Sheet

sessions for each child. If there are exceptional children in the class, their profiling will probably be somewhat more time consuming. When completed the screening becomes the first stage of a more thorough assessment.

The first profile is used as a baseline from which to make comparisons. The profiling should be repeated at the beginning, middle, and end of the year. This provides class grouping information and a comparative summary of a child's and a class' progress, as well as establishing criteria for ongoing evaluation.

IDENTIFICATION: Summary

As was mentioned at the start of this chapter, screening is only the first step toward an appropriate intervention for a child who is having difficulty in school. Screening allows the regular classroom teacher to efficiently locate children in the class who may need special help. The next step in the process is to determine more precisely the specific areas of the child's weaknesses. This is done through diagnosis--the subject of the next chapter.

Chapter Two

DIAGNOSIS

Diagnosis of a child should lead to correction or prevention of a problem. The diagnosis must be in terms that are meaningful to the teacher if it is to be useful in helping correct the problem. If it is presented in obscure terms, neither the teacher nor the child will benefit.

An in-depth diagnostic examination follows identification of children with possible learning problems. Before any prescriptive statement can be made, a clear picture of the child's strengths, deficits, and special characteristics needs to be developed. In order to have any value, the diagnosis must go beyond a learning label for the child. It must offer statements which attempt to define the child's situation so that a positive direction can be taken toward remediation of his problems.

This section of the manual explores some techniques available for developing a useful diagnostic statement. It is not the intent here to develop the ability of the user to practice clinical or projective interpretation of learning problems or to use diagnosis as a basis for categorization or classification of handicapped children. The practicality of the approach is intended to provide an organizational and planning format for the accurate and systematic use of diagnostic information as a teaching base for remedial and corrective instruction. The following four sections are included in this chapter:

Methods in Diagnosis

This includes an overview of formal and informal testing procedures. Some of these have been considered more traditional and others more contemporary and perhaps more relevant to the educational needs of today.

Total Assessment

This section compares and contrasts the techniques of informal and formal testing procedures, strategies for formulating and using informal tools and for administering formal instruments. Issues concerning personal data which may be gathered about a particular child are also discussed.

Task Analysis

Task Analysis is a valuable tool which can be employed in diagnosis and which moves directly to prescription. In this section, task analysis is defined and procedures for formulation and use of task analysis are described. Once the initial analysis has been completed, task analysis may be used to find the child's level of functioning (diagnosis) or to place him on a certain step in the hierarchy to begin instruction (prescription).

Diagnostic Teaching

This section offers an approach to diagnosis which investigates variables in instructional task presentation and response dialogue. Through experimentation, a learning environment description evolves that appears to be effective for a specific task and for a specific child.

DIAGNOSIS: Methods in Diagnosis

The diagnostic portrait of a child may be pulled together in a variety of ways. Through formal and informal examination, academic and social factors are studied. Information about the child's personal history may also clarify certain aspects of the child's behavior. The diagnostician's background and point of view, to a certain extent, will influence the type of information gathered. The thrust of the diagnostic statement will depend on what type of information was gathered and how it was interpreted.

The information on the following pages briefly outlines several different methods for diagnosis. Some of these are considered traditional, while others are more contemporary with the educational needs of today. Both types are included to give the reader a perspective on the historical development of diagnostic techniques.

Traditional Methods

Medical

The original contribution of medicine to the diagnosis of handicapped public school children has become increasingly less relevant to the adjustment of instructional approaches and educational decisions concerning handicapped children. A medical diagnosis can identify causative factors and provide a physiological etiology for the educational difficulties of children, and, therefore, may express the disorder as "minimal brain dysfunction," "central nervous system disorder," "biochemical irregularity," etc. The potential for translating such descriptive symptom clusters into an instructional baseline to adjust learning tasks for the handicapped child is remote.

Psycholinguistic Assessment

With the difficulty in relating educational tasks to medical diagnoses, the assignment of psychological learning processes as observable characteristics to the consequences of medical disorders seemed to generate more educationally relevant diagnostic descriptions. If the neurological dysfunction(s) of the problem child could be expressed as manifest psychological behaviors, including memory, conceptualization, and associative behaviors, design for remediation of these disorders became educationally more feasible. The clinical diagnosis of learning interference, therefore, included "soft signs" that could be observed by the educator. These were expressed in terms such as hyperactivity, impulsivity, poor attention span, frequent temper tantrums, poor memory, poor discrimination ability. With the growing use of psycholinguistic learning processes, diagnostic instruments were developed to measure these processes. Although useful as diagnostic information, one is not encouraged to employ a psycholinguistic test battery exclusively, as the resulting data alone do not clearly establish an effective teaching base. Familiar test instruments designed for use in this diagnostic methodology include the Illinois Test of Psycholinguistic Abilities (ITPA), Frostig Developmental Test of Visual Perception, Wepman

Test of Auditory Discrimination, Test of Auditory Perception, Detroit Test of Learning Aptitude, Bender Visual-Motor Gestalt Test.

Conventional Diagnostic Batteries

Of the most frequently practiced traditional diagnostic models, the diagnostic "test battery" appears to be the public school preference for "special child" evaluation.

Such batteries typically include the measurement of aptitude or intelligence, a relative achievement description in the basic subject academic areas, a skill analysis in a single academic area (regular Reading-Word Recognition), and the assessment of psychological learning processes (discussed in psycholinguistics).

Although the use of a well-selected test battery can provide useful information for a remedial teaching base, the traditional way such information has been used is limiting in that:

1. Newly-presented and differently-administered task items may not represent the child's natural work setting for problem resolution.
2. The interrelationship of several items of formal diagnostic data which represent several different measures of the same child is often unclear.
3. Other than to direct remedial planning toward broad categorical academic areas, it is difficult to refine this data to clear and concise instructional methods.

Contemporary Methods

Diagnostic-Teaching

This approach employs a minimum of standardized, diagnostic testing information. The child is observed in a variety of instructional situations, including most academic areas, with both individual independent study work and group participation.

Failure and stress are noted with certain materials and motivated success experiences noted using others. The teacher may vary the mode of presentation, the response expectation of the child, the speed and timing of the activity and task level from complex to more simplified materials.

It is expected that the diagnostic "interaction" with the child allows for more useful information regarding the child's learning styles, instructional levels in various areas, child's presentation changes, and a greater number of alternative teaching strategies.

Program Analysis

This diagnostic method eliminates the use of standardized test information entirely. The child is exposed, informally, to a sample of selected task items from both academic and developmental areas, including mathematics, reading, language, motor, and perceptual.

The child is ultimately "task-sampled" in several areas to determine the general performance level in each given area. The child's developmental level is observed in terms of program and sequence. General support and instructional practice is established for programming to his performance level.

Task Analysis

Although this format is quite similar to program analysis, task-analysis procedures are based upon general problem-solving models as opposed to problem-*level* models discussed in program analysis.

Task Process Analysis

The task-process analytic procedures will be discussed briefly to present a final suggestion for contemporary diagnostic methods.

In task analysis, mentioned above, emphasis is on the *task*. In task-process analysis, the *process* involved in learning the task is also considered. For example, if a child must remember the sound "a," as in cat, that is the *task*. The process involved is memory.

In order to provide the most relevant information possible, the contemporary methods of diagnosis will be discussed more fully throughout this chapter. The ultimate goal of any method should be a total assessment of the child identified as potentially handicapped. The concept of total assessment is treated in the following section.

DIAGNOSIS: Total Assessment

All activities that contribute information or data to the teacher's knowledge of the child, his problems and his strengths and abilities constitute the total process. This information is synthesized and used to formulate an assessment and appropriate instructional intervention for a particular child. The aims of a total assessment include:

1. Identifying children who are likely to have trouble in school;
2. Referring children for medical or psychiatric attention when needed;
3. Isolating specific areas of difficulty; and
4. Probing in depth the parameters of these problems.

Often this assessment is completed solely for the purpose of labeling, placing or referring youngsters who are failing in school. When used in this way assessment does not accomplish an educationally relevant goal. Instructional value for the teacher is extremely limited. Care must be taken by the diagnostician to translate data into a workable form rather than dealing exclusively in scores, I.Q., numbers, etc. The teacher, too, should be alert to the possibility that she may receive information about a child which may need interpretation in order to be useful. Although she is not expected to serve a testing function, she should familiarize herself with the goals and information to be gained from formal and informal testing. With this knowledge, she will be able to discuss findings with psychologists and others who provide data and will be able to ask more relevant questions concerning use of this information.

A total assessment may include the following types of information:

1. Formal test data
2. Informal test data

3. Input from the classroom teacher
4. Relevant personal and family data on the child
5. Results of task analysis

Comparison of Formal and Informal Test Procedures

Before formal testing and informal assessment are discussed as separate techniques, a comparison of the two may be valuable. This discussion focuses on the comparative aspects of formal testing versus informal assessment in the area of educational diagnosis.

At times various workers in the field of diagnosis and programming--such as school psychologists, resource teachers, speech and hearing specialists, remedial reading teachers and so forth--may have to decide whether or not to call for a complete, formal test battery for a child. Such workers may decide in favor of an informal assessment. They may find that they lack time and, therefore, cannot complete a formal test battery; or they may feel that an informal assessment will provide the necessary information; or they may lack the formal testing skills necessary to conduct a formal diagnosis.

To more clearly distinguish between formal testing and informal assessment, a few examples may be helpful. A Wechsler Intelligence Scale would be a part of a formal assessment; a nonstandardized teacher-made test containing general information questions would be a part of an informal assessment. A Bender Visual Motor Gestalt Test administered by a school psychologist would be a part of a formal testing; a teacher sitting down with a child and simply asking him to copy some forms that she has cut out of a magazine would be part of an informal assessment. An Illinois Test of Psycholinguistic Abilities would be part of a formal testing; simply discussing various pictures with a child in a nonstandardized manner would be a language sample as part of an informal assessment.

Formal testing and informal assessments have some important characteristics. A formal test instrument is administered in a standardized way according to a set of instructions usually contained in a manual. Administration must not vary from those instructions. In an informal setting, procedures or items can be administered in many ways and usually the manner of presentation is at the discretion of the administrator.

Also, in formal testing the scoring procedures are standardized or as objective as possible; that is to say, each test is scored the same way regardless of the child's individual characteristics. In informal assessment procedures the information may not be interpreted in the same way for each child. The reliability of the test instruments used is not known and assessment accuracy depends to a great extent upon the clinical skills of the administrator; in formal testing, however, standardized procedures are followed accurately. Validity and reliability are more certain.

Validity refers to (1) the degree to which the test measures what it is supposed to measure and (2) the degree to which the test is predictive of those performances being tested. Reliability refers to the degree to which the test results will remain stable over a number of administrations.

Currently there are sets of test instruments characterized by their publishers as "criterion referenced tests." The major difference between a criterion referenced test and a standardized test is that the criterion referenced test depends entirely upon the accuracy of the tasks within the test for its predictive validity. The usefulness of the criterion referenced instrument depends upon the wisdom and skill with which the various test items are selected. If a criterion referenced instrument does not contain those items that represent tasks the administrator is interested in, then of course, the test instrument is useless. Within a criterion referenced instrument if a child passes specified test tasks, he is then said to have the skills those tasks refer to and can move on to the next steps in the instructional process.

A standardized test instrument, on the other hand, has been administered to what is called a "normative reference" population. The test has been administered to a sample of people selected to represent a universe of possible people to whom the test might be administered. For example, the Wechsler Intelligence Scale for Children was standardized with a normative group. This normative group is hopefully representative of groups of children in most public school settings. It is therefore important to study the characteristics of the sample population upon which the test was standardized. If it is felt that the child is represented in the normative population, it may be advantageous to administer that standardized test.

Mean and standard deviation for a standardized test can be calculated; with the criterion referenced test this information is not available. Also with the standardized test, standardized directions and scoring procedures are provided; a criterion reference test may or may not adhere to standardized instructions and scoring procedures.

Some educational diagnosticians and programmers might select an informal assessment procedure rather than a formal one because of time. Where time pressures are taken into consideration, it should be noted that follow-up procedures to observe the accuracy of the recommendations based on informal procedures are definitely important. The same, of course, is true of decisions based on the results of formal tests.

Either method, informal or formal, is acceptable provided that the decisions based on such assessments are carefully checked out and followed-up either through systematic observation procedures or post-test results.

Figure 2.1 further illustrates some of the similarities and differences between formal testing and informal assessment.

Informal or Criterion-Referenced Tests

Informal testing techniques can be extremely useful in educational diagnoses. A great advantage is that this type of assessment can be carried out by the classroom teacher in the educational setting the child is used to. This increases the probability that the child will perform in a typical way. Also, any area of

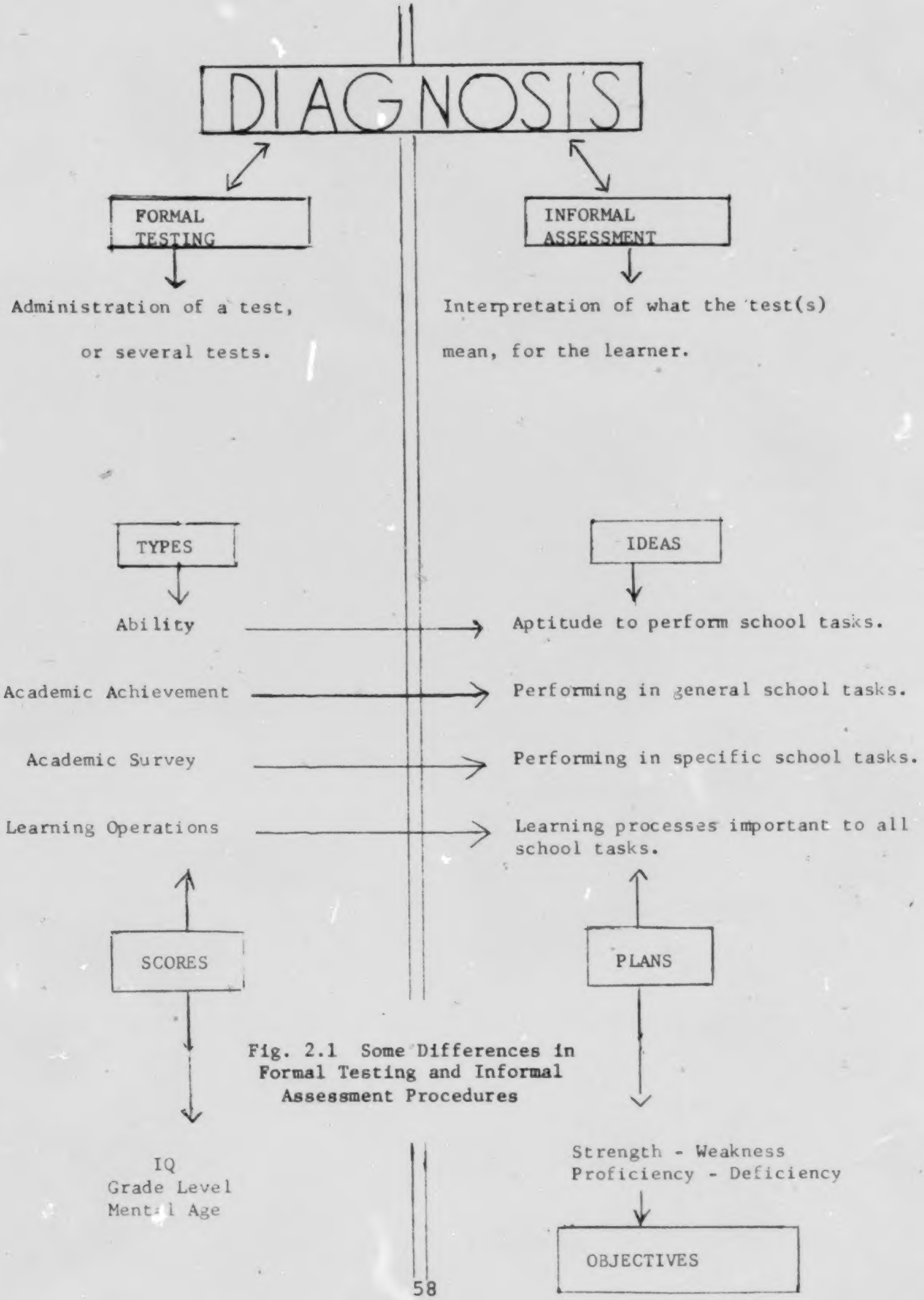

DIAGNOSIS
FORMAL TESTING
INFORMAL ASSESSMENT
Administration of a test, or several tests.
Interpretation of what the test(s) mean, for the learner.
TYPES
IDEAS
Ability
Aptitude to perform school tasks.
Academic Achievement
Performing in general school tasks.
Academic Survey
Performing in specific school tasks.
Learning Operations
Learning processes important to all school tasks.
SCORES
PLANS
IQ
Grade Level
Mental Age
Strength - Weakness
Proficiency - Deficiency
OBJECTIVES

Fig. 2.1 Some Differences in Formal Testing and Informal Assessment Procedures

educational skill can be probed with informal testing as the tasks can be arranged to match the needs of the teacher. The goal of informal assessment is to locate specific areas of strength and weakness. If formal instruments have been used, informal testing can expand, verify, and, if necessary, discard conclusions and recommendations of formal assessment.

Informal techniques are generally based upon criterion-referenced analysis. This type of analysis compares the child's strengths and deficits with "normal" development, not by comparing his performance directly to others. The diagnostic value of informal techniques lies in the fact that the teacher can pinpoint actual skill deficits and plan remediations based on these deficits.

Informal tests should be used when:

1. An authorized administrator of formal tools is not available for assistance.
2. Results of formal testing are too global in nature to serve as a prescriptive base.
3. The diagnostician is concerned with a sample or estimate of the child's level within a specific skill sequence of "set."
4. Formal tests are either unavailable or do not assess the problem area of concern.

Formulating Informal Assessment Tools

A testing situation need not always be established in using informal instruments. Observation of a child as he works on a class assignment, determination of error patterns on a daily worksheet, listening to a child read in a group and noting errors, etc., can all offer valuable diagnostic information. If deficits are noted, perhaps more in-depth study should be undertaken. The following suggestions are meant to give direction to diagnosis if more specific information is desired.

Development of an Informal Inventory

1. Skills to be assessed should be sequenced or ordered so that performance on each skill is dependent on success with the previous task.
2. Select tasks that will sample the skills.

3. Decide what type of response is most appropriate (oral, written, motor, etc.).
4. Select a criterion of acceptable performance.
5. Present the tasks to the student in order of difficulty.
6. Devise a system for recording information.
7. Note error patterns and gaps in skills.
8. Note the lowest level of difficulty the child encounters.
9. Note relevant observations such as the child's approach to the task, rate of speed at which he works, attention span, etc.

To illustrate the steps in informal diagnosis, the following example is included.

A second-grade teacher plans to assess the skills of her students in the subject area of mathematics. She does not have a formal instrument which will provide adequate information about these skills so she wants to develop an informal tool. First, she must decide what skills she feels a second grader should have to be functioning adequately. One sequence may be:

1. Adding two single numbers to total less than ten.
2. Adding two single numbers to total more than ten.
3. Adding two double-digit numbers which involves no carrying.
4. Adding two double-digit numbers and carrying to one place.

Having decided upon this sequence, she makes a work-sheet which looks like this:

$$\begin{array}{rrrrrrrrrrr} 4 & & 3 & & 6 & \qquad & 8 & & 7 & & 5 \\ +2 & & +1 & & +3 & & +2 & & +7 & & +8 \\ \hline \end{array}$$

$$\begin{array}{rrrrrrrrrrr} 22 & & 16 & & 32 & \qquad & 27 & & 32 & & 46 \\ +34 & & +13 & & +45 & & +14 & & +28 & & +29 \\ \hline \end{array}$$

She has three samples of each task. Two correct out of each three will denote mastery. She makes a form with each child's name at the top and calls one child at a time to do the worksheet (if time does not permit one-to-one administration, this particular example could be given to groups). Individual testing, however allows the teacher to observe unique methods the child uses and particular areas of frustration. The teacher notes on the form which skills are mastered and the areas in which the child experiences difficulty; particular aspects about the way the child does each task (counts on fingers, works very slowly, etc.) are noted. This information is placed with other diagnostic data on each child in preparation for writing the prescription.

Exceptional or handicapped children often act on a task sequence in an unexpected order, so that despite success with terminal tasks, mastery or utilization of prior tasks may be inadequate. The child may be able to perform tasks A B C & D, lack skills E F & G but be able to complete the terminal task H. It is important to note gaps in task sequence and develop these as well as planning for further terminal objectives.

In developing informal assessments, the following can provide a basis for skills to be tested:

1. Scope and sequence of skills areas;
2. Prescribed guidelines from school district;
3. Task analysis of a particular skill;
4. Motor skills necessary for adequate functioning;
5. Growth and developmental sequence; and
6. Criterion-referenced skills.

Formal diagnostic instruments may be used as a model for developing informal techniques. A teacher should familiarize herself with some of these and adapt them to her own needs.

Example of adapting formal instruments:

1. Paragraph reading tests may be assimilated by selecting paragraphs from published reading materials or teacher-prepared paragraphs emphasizing certain skills. These paragraphs may be presented in a manner similar to standardized presentations. Error patterns can be noted and a criterion (5 errors per hundred words) can be selected to determine the level at which instruction should begin.

2. Specific vocabulary words may be presented to a child and error patterns (short a, beginning consonants, etc.) can be noted.
3. Handwriting samples may be analyzed to locate specific needs for improvement of letter formation.

Formal Tests

Standardized tests may be useful for indicating a child's specific areas of deficit and strength. These instruments can offer a direction for further assessment and, if interpreted carefully, can be valuable tools in developing an instructional program. Formal tests may be used when the teacher needs to:

1. Eliminate or confirm the possibility of mental deficiency;
2. Point out general areas and levels of failure in such subjects as reading, spelling and arithmetic;
3. Indicate possible areas of language deficit;
4. Demonstrate modality strengths and weaknesses;
5. Identify patterns of disruptive and undesirable behavior;
6. Offer direction for further testing;
7. Recommend areas for diagnostic teaching; and
8. Suggest areas where feedback from the teacher will be needed.

Some drawbacks to consider in using formal tests should be mentioned. These cautions are not meant to discourage the use of formal testing tools, but rather to encourage their proper and realistic use.

1. The test may demonstrate the obvious: a child may be referred because he has difficulty sitting and attending in class. Formal testing may only point out that he is hyperactive--a diagnosis the teacher could have made herself.
2. The test may stress etiological factors. Some tests attempt to determine the cause of a problem rather than suggest educational solutions for that problem.
3. The test may dwell at length on the interpretation of minimal evidence. An attempt may be made to read too much into the data and observations of the tester.

4. Stress may be placed on numbers and scores rather than on the educational relevance of those scores. Information is often too generalized to be useful in educational planning.
5. Intra-subject variability plays a part and children may vary in their day-to-day performance. A test may represent a child's typical performance or a higher- or lower-than-average performance.
6. The testing situation tends to be artificial. Testing is often done outside the classroom by a person with whom the child may not be comfortable. This may affect his performance.
7. Each score for a child cannot be interpreted as an absolute value. It must be viewed as an estimate of the child's performance in a particular test area.
8. Interpretation of scores for children who differ from the population on which the test was standardized may be difficult. For example, children with severe behavior problems may not perform in the same way that "normal" children would. Their subtest scores, then, would not reflect accurately their abilities.

In order to utilize formal diagnostic data prescriptively, it is helpful to organize the available instruments according to the types of information to be gained. Figure 2.2 offers a sample classification of some of the available formal instruments.

A brief description of the four classifications of formal tests in Figure 2.2 may be helpful.

Ability/Capacity Information

Instruments which assess aptitude, capacity, or ability, offer a measure of the child's intelligence, mental age or other ability level in comparison with other children. If this global assessment is used in isolation, its diagnostic value is limited. However, when combined with further information such as observations during testing, item analysis and intra-test comparisons, some specific patterns can be analyzed.

An I.Q. score alone does not offer a basis for

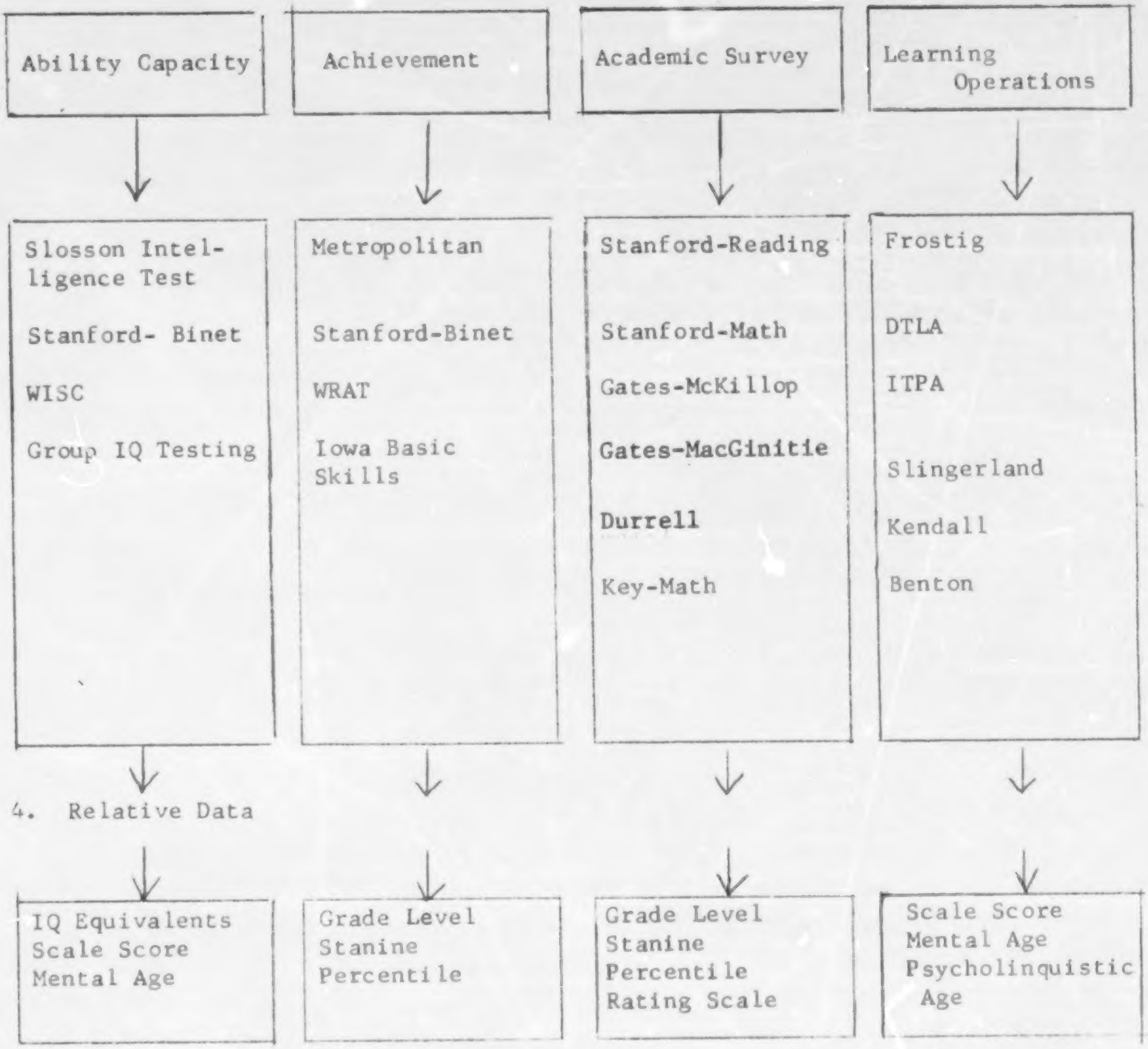

Ability Capacity
Achievement
Academic Survey
Learning Operations
Slosson Intelligence Test
Stanford- Binet
WISC
Group IQ Testing
Metropolitan
Stanford-Binet
WRAT
Iowa Basic Skills
Stanford-Reading
Stanford-Math
Gates-McKillop
Gates-MacGinitie
Durrell
Key-Math
Frostig
DTLA
ITPA
Slingerland
Kendall
Benton
4. Relative Data
IQ Equivalents
Scale Score
Mental Age
Grade Level
Stanine
Percentile
Grade Level
Stanine
Percentile
Rating Scale
Scale Score
Mental Age
Psycholinquistic Age

Figure 2.2 Sample Classification and Products of some Formal Tests

an individualized teaching approach. Even in categorizations of students into such classes as "slow-learner" and "mentally retarded," an I.Q. score of 75 does not determine whether the problem is, in fact, mental retardation, emotional interference, cultural deprivation or specific learning disability.

Achievement Information

Another classification of formal testing includes a wide variety of measures which yield a grade level or standard scores in reading, mathematics and spelling. These tests offer a more well-defined picture of where the child is actually functioning and what remedial work needs to be provided. They do not, however, denote a specific plan of action for teaching a particular child. Two deficient pupils with similar reading achievement levels may require very different instructional strategies for remediation. These tests are valuable as screening instruments to pinpoint areas for further testing.

Academic Survey Information

This type of data lends itself to more specific diagnostic-prescriptive information. Sub-areas of deficit or strength can be pinpointed and remediations can be adjusted to fit the areas of concern.

Learning Operations Information

Assessment measures designed to describe learning process areas generally include measures in the following areas:

1. Attention
2. Identification
3. Discrimination
4. Association
5. Memory
6. Sequencing
7. Responding

These tests allow for the greatest specification of diagnostic information. They attempt to define how a child learns best and what his weaknesses are in the learning processes.

Many excellent formal tests are available for use in clinical and classroom settings. The tests described in Appendix D represent a small sampling of the types of tests which may provide useful information. They were selected because they are often available and have been widely used in school settings.

Personal Information

Data gathered from informal assessment, formal testing, or both, may not be sufficient to provide all the information the teacher feels is necessary. When this is the case, relevant personal information may be acquired and added to the diagnostic package and used in preparing prescriptions. Such information (family history, home environment, etc.) is sufficiently personal that it should be regarded as confidential or classified information.

There is a growing trend toward protection of privacy and individual rights which adds greater emphasis to the need for confidentiality in dealing with information about students. This increasing emphasis provides the necessary safeguards from unauthorized use of personal information. New federal statutes (including the Buckley Amendment*) clarify specific privacy and individual rights; strict adherence to these requirements is mandatory and must be considered in data collection. In this section, guidelines are presented dealing with the following questions: When is there a real need to gather and use classified information? What information should be classified? Who should have access to it? How long and in what form should this information be retained?

There are limitless amounts of information that could be gathered on a particular child. Special team staff members often make detailed reports concerning many aspects of the child's private life. Before any information is collected, the question should be asked, "Is this information necessary to develop or improve a program for the child?" In order to protect the child's rights, only necessary information should be gathered. Also, if irrelevant data are included, record keeping becomes overly time consuming and interpretation becomes a task of sorting, rather than one of using information. Next, one should ask, "Should this information be classified?" If so, decisions as to who will need the information and who may have access are made. Some information which has been collected and used on a local school level will merit preservation on a long-term basis. Other information has only temporary value (daily assignments, for instance). Those persons who have collected data must decide before writing on any record, how much relevance for the future the information holds. Information about a child should not be collected unless one of the following justifications applies:

---

*Public Law 93-380, subparagraph (d) (4), Section 438, effective 11-19-74.

1. Physical problems

   A physical problem which interferes with the child's school life should be brought to the awareness of those dealing with that child. There may be reasons the child cannot participate in athletic activities, for example. Or, hearing of vision loss may alter his needs. He may have a bowel or bladder problem which causes offensive odor, and the teacher who is alert to the problem may be able to ease social embarrassment for the child.

2. Programming

   Factors which may hinder programming for a child, such as excessive absence or severe deficits in learning potential, may need to be determined and noted. Also, if parents are to become actively involved with the child's schoolwork, the teacher will need to know how much time the parents can spend with the child and whether the parent-child relationship is such that interaction on school work will be profitable. Such facts as parent's income, schooling, etc., are not relevant.

3. Information which parents feel is relevant

   There are many factors which the parent may feel should be noted by those working with the child. If religious persuasion prevents participation in certain activities, the parent may call this to the attention of the teacher. It is not necessary for the teacher to actively seek information of this nature but to note its relevance when the parent initiates the information. Others--such as clergymen, other teachers, and other parents --may volunteer information about a child. Such information should be carefully weighed and checked for accuracy and relevance before it is processed for further use.

4. Other information

   Depending upon the presenting problem of the referred child (for instance, behavioral problems, poor language development, motor difficulties, etc.) other types of information may be needed. If neurological impairment is suspected in a child, some information about unusual prenatal history, accidents, or diseases after birth may be justified. Information about the family unit, if needed, may be gathered through a family conference or interview. For example, if a behavior problem is involved, it may be necessary to determine whether or not that behavior is exhibited at home or in other environments. If the interviewer plans to share any of the information collected from the family, a release of information form appropriate to the school or district must be signed by the parents.

In many cases, several persons in the school will be assigned to gather information on a child. A practical approach is to divide the work, holding each staff member responsible for types of information relevant to his or her dealings with the child. For example, the principal may gather relevant data from previous school records. The classroom teacher may determine academic status and learning skills. A psychologist may administer psychological and personality tests and interpret their scores. The social worker visits the home and notes relevant details about the home environment. The speech therapist checks speech development and possibly tests for hearing problems. A school nurse may need to have information on the child's physical history, immunization record, etc.

With this type of division of responsibility, information can be gathered more quickly and with less overlap. It should be emphasized here that if families must be approached for information, the contact should be made by one staff member only and it should be as brief as possible. The parents should be told exactly what the information is to be used for and asked to sign a form releasing any information that is to be shared.

Some of the information gathered by those mentioned above may be general enough not to be kept confidential. Most of it, however, will need to be handled with a great deal of discretion. Many legal guidelines are being formulated about what can and cannot be placed in cumulative folders and who should have access to such folders. Before placing information in a folder, the legal implications in the district or state concerned should be studied.

On a more basic level, persons who have gathered information about a child need to decide for themselves what constitutes classified information. It may or may not be going into a cumulative folder, but is it to be made available as common knowledge? In making this decision, the person needs to consider aspects of trust, relevancy of material and potential use or misuse of the information.

Here again, many legal decisions have been made and these vary from state to state. Availability of cumulative folders depends to a great extent on local laws. When determining whether or not to make available personal information about a child, consider which data the parents have released through a signed statement, find the most recent information on local, state, and federal statutes relating to confidentiality, and use good, ethical judgment.

Some basic guidelines for releasing information follow. These are only suggested parameters, and each case should be considered separately.

1. If a person is actively involved with the child, such as a member of a special education team working with the child, that person will need some information about the child. Noninvolved people, such as parents other than the child's own, other teachers, children in the classroom, etc., however, should not have access to information about the child.
2. Only information for which a need can be clearly demonstrated should be provided to those working with the child. If certain information will aid that person in more effectively dealing with a child, then relating that information is probably justified. Keep in mind that too much information presented may cloud pertinent issues and be unnecessarily time consuming.
3. Different people dealing with the child will need different types of information. The nurse has gathered immunization information which is needed to carry out the health program. Similarly, the psychologist, to evaluate psychological adjustment, gathers I.Q. scores and psychological evaluations. They are relevant to the psychologist. But before giving any information to the classroom teacher, both the nurse and the psychologist should process and sort their information so it will have instructional value for that teacher rather than being a comprehensive report which may not apply to classroom needs.

The school evaluation team, or other appropriate personnel, should develop and agree upon a heirarchy for confidentiality. This should include examples of information which are available to anyone upon request, information not to be released unless it is to be used by education personnel in official duties, and data to be made available only upon order of a court or agency with subpoena power.

Permanent records can aid a child's future placement or they can damage him severely. Irrelevant, inaccurate, or biased information must be weeded out before records are written. Also, information should be excluded which will not be used later. It is the duty of the person who has accumulated any information to decide whether it should be preserved or whether its period of usefulness has passed.

DIAGNOSIS: Task Analysis

Definition

In task analysis, a task to be diagnosed or taught is analyzed and broken down into components. These components are arranged in a hierarchy from least difficult to most difficult and/or are placed in sequence from the first step to the last step in completion of the task. This progression, then is task analysis. It is a complement to the behavioral objective. (See Chapter 3, Prescription, p.106, for a definition of a behavioral objective.)

Purpose

The task analysis serves several purposes:

1. It is a device for carrying out ongoing diagnosis and evaluation as the child is instructed. The steps mastered can be checked off and progress can be noted.
2. It is an instructional tool. If it is carefully constructed, the instructor will be able to teach directly from the task analysis.
3. It is an evaluative instrument. By determining what skills the child already has and the number of steps he can complete in the analyzed task, his level of functioning on that skill can be determined.
4. Once a task analysis for a particular skill is completed, one can use that analysis as a reference for future students with similar problems.
5. By completing a task analysis, one becomes aware of the scope and sequence of a skill he is attempting to teach. The basic skills which a child must master in order to perform a particular task are pinpointed.
6. If a program is failing, perhaps the child has been presented with a too-difficult task. Through task analysis, the instructor can reevaluate the child's skills and place him on a more appropriate difficulty level.

Formulation of Task Analysis

The most practical way to analyze a task is to work through the task from start to finish, attending to all physical, visual, and cognitive skills used, and also attending to each step in the task. As this is done, all relevant steps and skills should be written in a clear and simple form. This is not meant to be a long, drawn-out chore, but rather a useful statement of what it takes to complete a task.

As an example, consider the task of putting on and tying your shoes. Some component parts of putting on and tying your shoes are: take hold of shoe, loosen laces, hold shoe open, put toes in shoe, put foot in shoe, pull laces tight, tie shoe laces into bow.

As you read through that, you may have thought that some parts were left out. It does not tell to lace the shoes, nor does it analyze the steps it takes to actually tie the bow. It is obvious that each step given can be sliced into smaller steps. A detailed task analysis might be a list of over 100 steps in putting on a shoe.

The amount of detail needed in a task analysis will depend on how fast the student can learn and how much new information he can handle at one time. You may not know how fast the student can learn until you try to teach him the task. If you find that he cannot move from one step to the next, you then need to break the task down into smaller steps. This is done on the task analysis worksheet under task sequence modification. (See pages 78-79.)

In the shoe-tying example, it may be found that the child can master the first two skills, but has difficulty holding the shoe open. Step 3 is then modified to include holding the tongue forward. Again, things may go smoothly until step 6; tying shoe laces in a bow. This step might be broken down as follows:

1. Grasp laces
2. Cross laces
3. Pull one lace under the other
4. Pull tight

5. Make a loop in lace 1
6. Wrap lace 2 around lace 1
7. Push lace 2 under lace 1
8. Pull tight.

When an objective is stated, such as "Lisa will put on her shoes and tie a bow in the laces without help within five minutes or less," and you begin with the simplest part of the task --holding the shoe, you are assuming that Lisa knows what a show is, and that she can grasp it. If she fails the first step, the task must be further broken down and the earlier or prerequisite skills taught.

Cues are an important element of task analysis. Cues are the directions or instruction given by the teacher for student response. There must be cues for the terminal objective and possibly for each task. Cues should always be consistent because many handicapped children, particularly the severely handicapped, need consistency in order to be able to respond.

The following is an example of different cues that might come from different people in the student's environment. The objective is for the student to name the animal on the picture.

The aide says, "What is that?" The volunteer says, "What is this?" The teacher says, "Tell me what is on the picture." The mother says, "What's this a picture of?"

The same person may also give different cues for one objective. He may not get a response to one cue so he goes to another, and then to still another, never getting a response from any of the cues. Although the eventual good is to obtain a response to different cues, it is initially very difficult for a severely retarded child to respond correctly to the same objective with many different cues.

On every task analysis there is the possibility that there will be a need to give the cue in simpler words. The appropriate cue may not be determined until after many trials with the student. It is important that the child be given many opportunities to respond to the same cue before it is changed. Also, the child should be given enough time to respond to a cue before it is repeated.

If there is no response to a cue, which appears to be in its simplest form, the cue may need to be accompanied by gestures. If there is no response to physical gestures, demonstration by the teacher will be necessary. Finally, the cue may need to be accompanied by physical manipulation of the student to produce the correct response, or possibly, if the child is to respond verbally, the teacher will recite with the child.

Use of Task to Find Entry Level

The following example shows how task analysis can be used diagnostically to determine the child's level of functioning on a certain skill. The terminal objective is used to illustrate prerequisite skill and entry level.

Richard, on cue, will count out loud a number of objects up to twenty. He will receive no help and will respond with no more than a one-second hesitation between numbers. When the child is presented with this task, it has been determined in advance that he has the prerequisite skills to learn the task. He can speak out loud, follow directions, etc. We can analyze the task in the following way:

1. Recognizes objects.
2. Discriminates separate objects.
3. Can repeat numerical names in order from one to twenty.
4. Can place his finger on one object at a time while repeating a numeral name to correspond (first item touched, with child saying, "one").
5. Can perform the task with one object, two objects, etc. up to 20.

Once the task has been analyzed, the student is tested to see how many of the steps he can perform already. This testing is part of the diagnostic teaching process. If the student cannot perform the first step, a new, lower order terminal objective needs to be written. A new task analysis must be developed for this new objective. If the child can perform at least the first step of the higher order objective, the entry level can be determined by testing the student on each task in the hierarchy. The earliest step which the child fails to accomplish is his entry level. The instructional program may begin at this level. From the example above, Richard was tested and it was found he could repeat the numbers from 1-20 but could not place his finger on one object at a time. Instruction began (entry level) with task 4.

Terminology of Task Analysis

Terminal or Behavioral Objective: This is the end goal or task that the child is to do. It may be tying shoes which is really a terminal task, or it may be reading a list of words, which may be prerequisite for another terminal objective.

Task: This is a specific behavior that the student is to do. Tying shoes could be a task.

Skill Prerequisite: This refers to the skills that are necessary for the completion of a particular task. It usually does not include process prerequisites. A skill prerequisite for oral spelling would be to know the letter names.

Process Prerequisites: These are a group of processes like paying attention, discrimination, remembering, association, and expression.

1. Input--

   The child received from his environment input or stimulation, through one of the five senses.

2. Process--

   The child acts upon the information received from the environment. He may associate, remember, discriminate, alter, or do other things with information.

3. Response--

   The child expresses himself in some way in regard to the information. The response could be verbal or motorical.

(Figure 2.3 illustrates primary processes basic to all learning.)

There are six primary processes that are prerequisites to completing an objective. These are generally not included in the statement of the task analysis, but must be kept in mind when planning. A child with severe multiple handicaps may need to be tested in each of the six processes. Moderately handicapped children will probably not have much difficulty with them.

1. The child must pay attention to the cues. The cues could be verbal commands that the child hears.
2. The child must be able to understand the cues, or understand the language of the cues, for example, "circle," "letters," "upside down," etc.
3. The child must be able to tell the difference or discriminate, between things he hears, sees, or does. If a child is having difficulty at this level, he needs instruction in a gross discriminatory training program.
4. The child must remember what he hears, sees, or does so that he will be able to respond to a stimulus in a predictable manner.
5. A child must be able to respond to cues either by speaking or reading.
6. A child must act out his response.

A student who can pay attention, discriminate, remember, and understand, but cannot respond will have to develop a response. A possible response repertoire would be speaking, writing, movement (demonstration), circling, pointing, underlining, touching, gesture (head nodding), or some other signal that would indicate a yes or no.

Summary of Steps in Task Analysis

1. Write a terminal objective. You need to know what you are going to task analyze. The objective is written on the worksheet.
2. Answer the question: What does the student have to know before he can meet the objective?
3. Do step two again for each answer to the

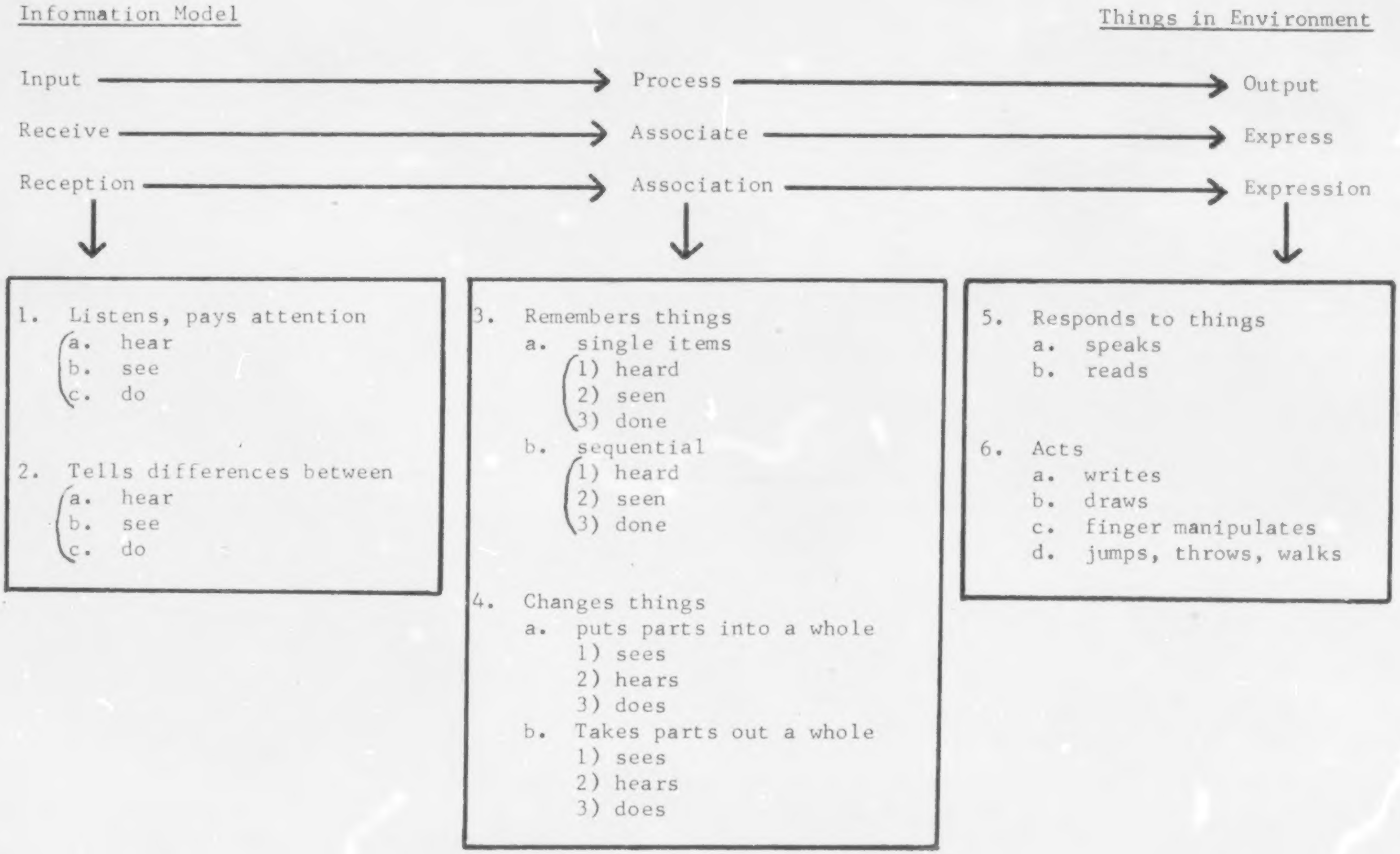

Information Model
Things in Environment
Input
Process
Output
Receive
Associate
Express
Reception
Association
Expression
1. Listens, pays attention
a. hear
b. see
c. do
2. Tells differences between
a. hear
b. see
c. do
3. Remembers things
a. single items
1) heard
2) seen
3) done
b. sequential
1) heard
2) seen
3) done
4. Changes things
a. puts parts into a whole
1) sees
2) hears
3) does
b. Takes parts out a whole
1) sees
2) hears
3) does
5. Responds to things
a. speaks
b. reads
6. Acts
a. writes
b. draws
c. finger manipulates
d. jumps, throws, walks

Figure 2.3 Task Analysis Model

question. This process continues until you think that you are to a point where the student might be successful. You do not know if the task analysis is appropriate for the selected student until you try it. It can be modified under task sequence modification later.

4. Make sure that all tasks are in sequence.
5. Determine cues.
6. Select materials.
7. Modify task sequence if necessary.

The next several pages contain a task analysis for two different tasks. The first is a self-help of putting on shoes, and the second task analysis is identifying six letters from a visual stimulus. This also considers some of the process prerequisite basic to attention and discrimination discussed earlier.

Task Analysis Worksheet

Terminal Objective:

Lisa will put on her shoes and tie a bow in the laces without help and within five minutes or less.

Cues:

"Put on your shoes and tie the laces."

Task Sequence:

1. Take hold of shoe
2. Loosen laces
3. Hold shoe open
4. Put toes in shoe
5. Put rest of feet in shoe
6. Pull laces tight
7. Tie shoe laces into bow
8.
9.
10.

Task Sequence Modification:

3a. Hold tongue of shoe forward.
5a. Pull tongue up.
7a. Grasp laces.

b. Cross laces.
c. Pull one lace under other and pull tight.
d. Make loop in lace 1.
e. Wrap lace 2 around.
f. Pull loop from lace 2 through itself.

Task Analysis Worksheet

Terminal Objective:

Eric on cue, will name 6 letters, printed on card A, B, J, M. D, and V, without help and within one second or less per letter.

Cues:

"Can you tell me what these letters are?"

Materials:

Card with printed letters A, J, B, M, D, and V.

Task Sequence:

1. Attends to primary language components "Tell me," and "letters."
2. Tells difference between primary language components mentioned in number 1.
3. Attends to single visual stimulus (one graphic symbol).
4. Tells difference between several visual stimuli.
5. Remembers verbal equivalent for graphic symbols.
6. Changes graphic symbols to verbal equivalents.
7. Responds by speaking visual equivalent for graphic symbols.
8.
9.
10.

Task Sequence Modification:

None

Task Process Analysis

An additional element may be added to task analysis: that of determining what processes are involved in completing the task. These processes are outlined in Figure 2.4 and are paralleled

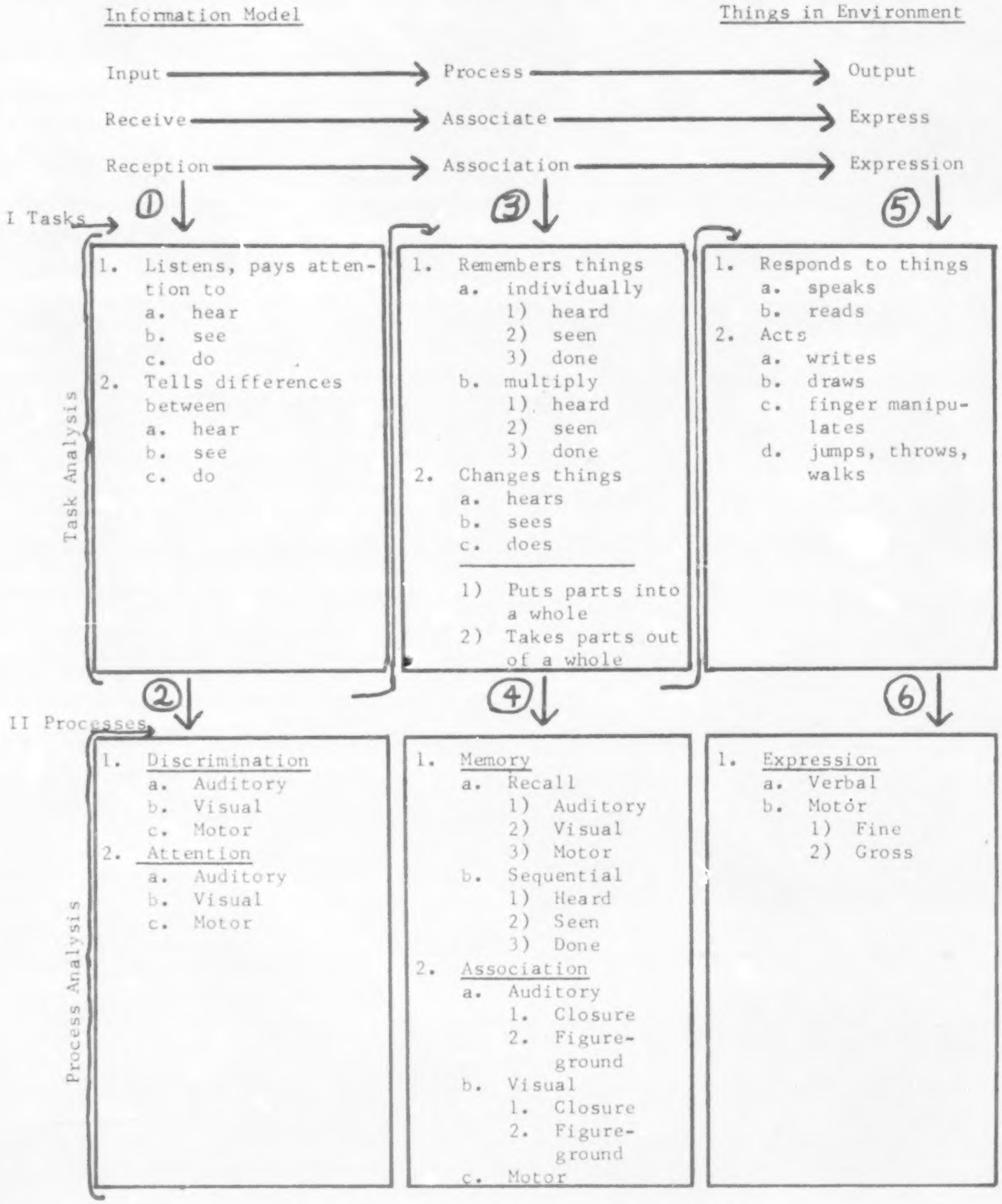

Information Model
Things in Environment
Input
Process
Output
Receive
Associate
Express
Reception
Association
Expression
①
③
⑤
I Tasks
Task Analysis
1. Listens, pays attention to
a. hear
b. see
c. do
2. Tells differences between
a. hear
b. see
c. do
1. Remembers things
a. individually
1) heard
2) seen
3) done
b. multiply
1) heard
2) seen
3) done
2. Changes things
a. hears
b. sees
c. does
1) Puts parts into a whole
2) Takes parts out of a whole
1. Responds to things
a. speaks
b. reads
2. Acts
a. writes
b. draws
c. finger manipulates
d. jumps, throws, walks
②
④
⑥
II Processes
Process Analysis
1. Discrimination
a. Auditory
b. Visual
c. Motor
2. Attention
a. Auditory
b. Visual
c. Motor
1. Memory
a. Recall
1) Auditory
2) Visual
3) Motor
b. Sequential
1) Heard
2) Seen
3) Done
2. Association
a. Auditory
1. Closure
2. Figure-ground
b. Visual
1. Closure
2. Figure-ground
c. Motor
1. Expression
a. Verbal
b. Motor
1) Fine
2) Gross

Figure 2.4 Task-Process Analysis Model

with the types of tasks with which they correspond. A particular value of this type of pairing is that common error patterns in more than one area may be picked out. For example, if a child is having difficulty counting in arithmetic and in sequencing sounds for blending in reading, a strict task analysis of the two activities might cause them to be viewed as isolated skills and to be taught separately. However, when looked at as two sequential problems, the remediation for both can be coordinated and developed for an added push in sequential skills.

As a support procedure for the use of the task-process analytic method, it is recommended that adjustments for both content and level of the terminal task analysis be included.

If, after careful observation, it is difficult to specify the failure subtask which is failed of the terminal task or a suspected failure subtask has been identified, the diagnostician shall accordingly:

1. Determine one or more failure subtasks.
2. Verify one or more suspected failure subtasks through adjustment of the required task by content or level modification.

Modifying by Content: All terminal tasks (and their consequent subtasks) contain identified content-types which represent a certain datum for the child's manipulation.

If a child fails an outcome or terminal task, it should not suggest failure with all related subtasks; neither does it suggest failure with the provided content type in all related subtasks. A child who fails a specified subtask which employes nonphonetic work as its content type may succeed, with phonetic word constructions, in the same subtask item. This change, from nonphonetic to phonetic is content modification.

Teacher Report: Johnny proceeds aimlessly and with confusion through two visual worksheet tasks requiring the discrimination of "largest" geometric forms. His responses with some items are accurate, with most others, he incorrectly identifies medium-size and smallest items.

Teacher Conclusion: Size-conservation/ spatial concepts are deficient; requires training with kinesthetic materials.

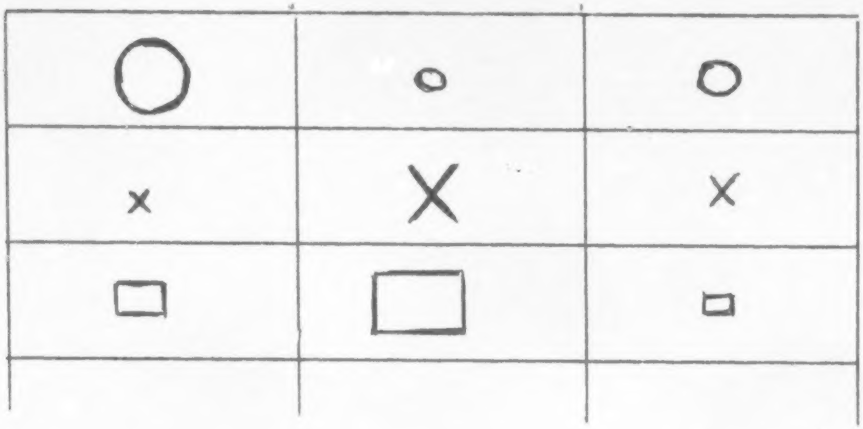
Observation: Johnny is capable of succeeding with the two prior visual worksheets, and several others which also include rotations and transpositions of the shapes, when required to discriminate the "biggest" of the shapes he sees.

Conclusion: With *content* *modification* of altering a primary language component, "largest" → "biggest," Johnny is able to successfully complete the terminal tasks. This observation precludes the decision to suspect spatial/perceptual anomalies. Had adjustment by content not allowed for the child's success, other subtask content modifications are performed until the child performs accurately. Until all subsequent modifications are sampled, the terminal task (and its general instructional area) do not become suspect components of deficiency. If all potential modifications are sampled without producing successful terminal performance, the problem in the instructional area should then be addressed by the diagnostician.

Modifying by level: In addition to or combined with adjustments to the terminal task by content, modification of the task may be executed by level changes:

1. The content within the terminal or subtask(s) may be retained, but the *level*, (rate of presentation, time required for response, number of content items used, and order of presentation of content items) may be adjusted; or
2. The terminal task is adjusted both by level and by content. *Note*: The diagnostician is cautioned not to employ gross content/level adjustments, particularly when both changes are used, as the products may easily become not minor variations of the original terminal tasks, but *new* terminal tasks entirely. (a child's decoding ability to correctly read the word "bat," but not "flat" [content modification] is grossly misappraised by adjusting content, requiring him to sound the short vowel /a/.)

The following terminal task illustration provides an example of a common classroom academic activity. The child is given a worksheet, accompanied by verbal instructions, to circle the smallest object in each row.



This terminal task is then broken down into its task-process elements. Figure 2.5, a task-process worksheet, illustrates this breakdown.

DIAGNOSIS: Diagnostic Teaching

Teaching is the imparting of a skill or knowledge. What happens between teaching and being taught determines whether learning has taken place.

Primarily, teaching involves a selection process. The teacher selects what will be taught. Next, that which has been selected is presented. Sometimes "teaching" ceases after the presentation. But then the question remains . . . "Has the knowledge that was presented been learned?" To establish an answer, a change of student behavior has be be demonstrated. For that reason, the presenter should continue teaching by giving a command or cue and expecting from that cue a response. If the response is correct, learning is assumed. An incorrect response indicates that either the cue was inappropriate or learning has not taken place.

TASK - PROCESS WORKSHEET

TERMINAL TASK	DIRECTIONS	TANGIBLE MEDIA
Child to select smallest object among several items and circle responses	"Circle the smallest object in each row"	Visual worksheet Example:

TASK SEQUENCE	PROCESS SEQUENCE
1. A. Attends to and Tells differences between primary language components "row," "circle," "smallest object." B Attends to task sheet of visual configurations.	1. A Auditory Reception Auditory Discrimination B Visual Reception Visual Discrimination
2. Changes verbal referent "row" to visual equivalent on worksheet page	2. Auditory Visual Association
3. Attends to visual symbols contained in single "row"	3. Visual Reception
4. Tells difference between size variation among visual symbols.	4. Visual Discrimination
5. Changes verbal referent "smallest" to size conservation equivalent among available items	5. A Auditory-Visual Association B. Visual Figure-ground Association
6. Changes verbal referent "circle" to equivalent motor pattern response	6. Auditory-Motor Association
7. Responds by circling selected item	7. Motor Expression
8. Remembers directions from row to row	8. Auditory Memory

Content Modification ↔	Level Modification
1. Use "littlest" vs "smallest"	1. Say "point to" vs "circle"
2.	2. a Expose only one row at a time b Give more time for response
3.	3. Point to each visual symbol.
4.	4. Use greater size differences
5. Use concrete objects, vary by size	5. Identify classroom objects bigger/smaller
6. Reproduce a "circle" on separate page	6. Identify "circle" among simple geometrics
7.	7. Ask pupil to copy a model "circle."

Figure 2.5 Task Process Worksheet

Diagnostic-teaching investigates those crucial steps between "teach" and "learn." The purpose of the investigation is to find a teaching procedure to use for a specific child that will allow him to demonstrate the highest quality of correct responses on a specific task.

If a child is not adequately responding to teaching, typically he is referred to a special educator. Psycholinguistic tests and achievement tests may be administered. The outcome is a summary of strengths and weakness in expressive, receptive, and associative modes and a general grade level of achievement. From this summary a diagnostic prescription is written which suggests methods and strategies for either strengthening the weaknesses or instructing through the strengths.

An alternative to this procedure is what has been called the ability testing procedure. Task analysis, discussed in the previous section, is the primary method of ability testing. Its purpose is to check the relevance of the presented task. Is the entry level on target for the task and child? Have prerequisite skills been learned? Is the task sequence the most appropriate for the child? Given the instructional sequence, diagnostic-teaching seeks to define further how to teach that sequence.

The child is observed in a variety of instructional situations. Failure, stress, and successes are noted with 1) motivational methods, 2) modes of presentations, 3) types and responses, 4) speed and timing of the activity, and 5) response to various materials.

Environments for Observation

The investigation occurs within two environments: the uncontrolled and the controlled. In an uncontrolled environment a situation in which the child is already participating is observed. The observation is an overview of what is happening in instructional or noninstructional situations.

Instructionally, the child participates in whole class instruction, group work, and individual, independent work. Length of attendance to the task is noted. Motivational level is observed. Accuracy is recorded. Also, the child's frustration level in each group is observed. A comparison is then made between the different groupings. It might reveal that the child attends longer in individual work but his accuracy is lowest in this situation. Or it might be noted that the child reacts negatively in a small group by hitting other group members and not completing the task. Many of the surrounding variables are noted; who is in the working group, who is teaching, time of day, instruction, and what is being taught.

Noninstructional observation is used for two purposes: to investigate possible motivational activities and to verify instructional observation findings. Motivational activities can be free-time playing with blocks, a game of ping pong, a one-on-one basketball game, an art project, or quiet reading time contingent on task completion. Watching a child's responses to these various activities is often a good indication of what is motivating to that child.

A child's receptive or expressive skills may present themselves differently in instructional situations and noninstructional activities. The child who does not follow directions, or does not answer questions directed to him or sits quietly in a classroom may behave differently on the playground. He may give directions for playing a new game or be quickly taught the rules to a new card game. It is important to note that while a child is not responding as expected in a classroom, it does not necessarily mean that the child cannot respond.

The uncontrolled environment is just as it is labeled; a situation where the variables cannot be controlled. On the other hand, the controlled environment seeks to purify the situation as much as possible. The teacher brings into the teach-learn environment only selected variables. Those variables are the basis of the investigation.

Diagnostic Teaching Groupings

Only two basic structures are similar for all children: groupings and time periods.

1. One-to-one (with a teacher-adult).
2. With a peer or cross-peer tutor.
3. Groups of two or more learners.

Each grouping is used with the students who are to be assessed.

One-to-One (Teacher-Adult): A task to be taught is selected. The teacher carefully structures the presentations. It is essential for the teacher to give new information and then request a specific response. She uses several simple activities for a warm-up which may establish communication between teacher and learner. The task and presentation are restructured until there are acceptable responses. For instance, the teacher will present the sounds of "J" and "P" and ask the child to mimic the sounds. There may be no response. Given clues, the child still may not respond. Either the task is not appropriate or the child is not ready to respond to the teacher. The teacher may have to back up and use more warm-up activties or teach mimicking. But before the session can be considered diagnostic and valid for revealing solutions, communication must be established. The child must know what is expected of him. And the teacher must be sure that the child knows. This relationship is the basis for establishing diagnostic results.

Peer Tutor/Cross-Peer Tutor: Similar to the one-to-one situation, the tutor structure requires a presentation and a cue for a response. The cue-response dialogue must be established before the teaching begins. This grouping is used to explore the possibilities of classroom assistance. Can another child of the same age or older teach a skill and receive a higher quality of response? The tutor's presentation is structured by the diagnostic teacher. However, the language, motivational methods, and creativity of the tutor are not restricted because individual style is the key to effectiveness. It was found in a recent experiment with tutor instruction, that first graders responded to fifth and sixth grade tutors. Ten children who had not learned their letters or sound by

February learned them during one month of tutor instruction. The tutor's approach was unique and not one a teacher would employ. Such statements as "If ya don't want to be dumb like me . . . ya better learn these things" were heard. Some children, however, did not gain from this teaching situation. This suggests that different children need different approaches to tutor teaching. Clues concerning appropriate approaches for a particular child may be noted in the diagnostic procedure.

Groups: Size and make-up of learning groups affect learning for some children. A child who is being assessed is taught a new skill and given an opportunity to respond in a variety of group situations. Generally the groupings start with just two members and increase in size. Because it is realistic to think of teaching in groups in a classroom, the largest possible grouping is sought. If a child works well in a group of three, then a group of four or five is tried. The group size is increased until the response quality decreases. In this way optimum group size is ascertained.

The group make-up is also altered. Proportion of boys to girls is changed. Class stars and class problem children are interchanged with children functioning at about the same level as the child being assessed. It may be found that a child works most efficiently in groups of two to seven children, performing above his performance level.

The purpose of all groupings is to assist the teacher in structuring the classroom and the instructional setting so that the lesson can be taught most efficiently and with the highest possible quality of response.

Time Periods

Time periods will vary only slightly for diagnostic teaching. Generally the investigation should take 30 minutes to one-hour a day for five to ten days.

While the calculations of the time spent seem impossible, an accurate selective assessment depends on the rapport between teacher and learner and the consistency of responses. Consistency is established by repeated performance for two or three days.

Length of time per child will depend on the learning age of the child. Some kindergarten-aged children may work most efficiently for only fifteen minutes. If an instructional sequence offers a variety of learning situations as it should, 30 to 60 minutes is a realistic time allotment.

Close observation of attendance to the task is a key factor in a structured situation. The classroom may demand attendance to a specific task such as programmed reading for one hour. While the child may be able to attend to some tasks for an hour, it may be revealed that this particular task will not motivate him, hold his interest, or instruct him sufficiently for him to attend for the full hour. Until a match between the length of sessions and the instructional approach is found, the diagnostic sessions should continue.

Variables to be Investigated

After appropriate groupings and time periods have been determined, many variables may be investigated. The needs of the individual situation will determine which of the possible variations will be focused upon. The following discussion presents some possibilites for further investigation.

Motivation: When a child does not respond correctly, it may be difficult to distinguish the reason. Is it because he is unable to respond, or is it because he just will not respond? The first part of ability testing (task analysis) often disclosed that the child is not able to do the task or a resequenced version of the specific task. However, if the task is within the ability range, the reason for nonperformance might be that the child is refusing to perform. The purpose for motivation then is to rearrange the environment so that performance of a task is worthwhile to the learner. That does not imply that a child dictates his instructional limits, but that his needs are indeed considered.

Motivation does three things. It energizes or helps initiate behavior. It gives behavioral direction and it aids in the persistence of a behavior. The first decision made when structuring environment is to decide the purpose for the motivation: to initiate, to direct, or to aid in persistence.

Self-motivation is sometimes based on the avoidance of failure. A child might **attend** to a task so that he will not be deprived of lunch or praise from other people. This type of motivation is difficult to control or structure. Also, failure may result in further frustration. Diagnostic teaching seeks to discover these failure-avoidance methods and to offer a positive approach in their place.

Motivation can be based on efforts to succeed. A task may be structured to draw on:

1. The child's interests.

   Example--John is fascinated by machines. His reading tasks are about machines. Other tasks include the building of machines.

2. Rewarding experiences for the child.

   Example--John is allowed to keep the machines he makes.

3. Responsiblity.

   Example--John makes a device that makes counting lunch money easier for one classmate. He has been responsible for another's success.

4. Need for praise from others.

   Example--The class applauded John's device. The principal told John he had made a contribution to the school.

5. Sense of personal worth.

   Example--Clare was given math problems that she wouldn't or couldn't do. However, when when was allowed to make accurate change in the lunchroom, she showed great improvement.

Positive motivation also includes contingencies: the child is motivated by tokens or extrinsic reinforcement.

Ultimately, self-motivation is desirable. In a diagnostic situation a task is presented offering each type of motivation. That which brings the desired results is then recommended. Persistence at a task will best result from a self-motivation schedule. So, while "other" motivations may be selected initially, self-motivation should be the ultimate goal. A successful response hinges on motivating and knowing the probability of reaching that success.

Manner of Presentation: Manner is the actual way of presenting. It can be divided into personal and nonpersonal presentations. Personal presentations include those things presented by an instructor, such as visual (cue cards), auditory (directions, imitations), demonstration (mimicking of how to walk or skip), or a combination of these. Nonpersonal presentation includes visual media (film strip, programmed material), auditory media (cassette tape), or a combination (film, language master, Systems 80). In diagnostic teaching each approach is tried for a designated task and the one or ones that elicit the highest quality of responses are the recommended manner.

Form of Presentation: Each task may be presented by the part method or the whole method. In the part method, the task is taught by breaking up component parts and instructing for each individually. Academic areas, particularly, are adapted to this method. The whole method is teaching the entire task at one time. This can be used for a motor skill and rate learning.

Some children, for example, learn a word easier by phonetically breaking up the component parts. Others learn most effectively by learning the whole word at once. Swinging the bat, however, may be most efficiently taught by showing the entire swinging motion, starting with bat over shoulder, elbows bent, and swinging forward with extended arms.

The task may be massed or distributed over a length of time. Mass presentation in the teaching of all the component parts at one time. Distributed presentation is the teaching of the component parts over an extended time period with other tasks being taught intermittently.

To achieve mastery of a skill (such as cursive writing) some children need to extend the learning process over the entire school year. Children learning other skills such as all the vowel sounds need to learn the entire group at once. This method allows for immediate similarity and difference discrimination, a supportive cue for learning.

Variety in Presentation: The investigation for variety should distinguish the fine line between too much and too little. Enough variety is needed to maintain interest and stimulate different practice responses, but too much variety will inhibit learning. Variety is appropriate as long as the learning curve is ascending and the child enjoys the task.

Response Manner: The type of response required from a task is indicated by the cue given. A child may respond verbally, by writing, by motor responses (such as pushing a button or selecting an item), or by imitating. Each of the responses has a quality limit as well. Imitation or copying (repeat what I say); completion (the sky is _______); multiple choice (the sky is [blue, red, orange]); or open-ended (describe the sky). The selection of an appropriate response manner is as important as any other selection.

Given a history test, Betty cried and put down her pencil. When asked the questions orally she verbally answered each one correctly. Elton could read the questions but preferred answering in a tape recorder without anyone around. When the test was changed from fill in the blank to multiple choice, Joe's accuracy increased by 80 percent.

The required response must fall within this capacity of response range. No student can be motivated to do something that is physically or mentally too difficult for him.

Also, an expected degree of recall must be considered. How much is to be remembered over how long a period of time? During the teaching of multiplication, for example, will memorization of the time tables be expected? Or will the child be allowed to keep the tables with him? Will the whole process of mulitplying and adding of a three-place multiplier be expected to be memorized without clues? What kind of memory demand is made and what kind of clues must be provided?

Timing and Speed of Response: The time given to a task presentation and the speed expected for the response depends on the "power of learning" for each child or the type of task. Any of the discussed variances on a task will result in four types of responses. The child's learning power will be:

1. Slow to respond with a low accuracy
2. Slow to respond with a high accuracy
3. Quick to respond with a low accuracy
4. Quick to respond with a high accuracy

There are less distinctive categories but for purpose of explanation these four are described.

A slow response means that a child will take a lower time to comprehend instruction and be ready to respond according to the instructional clue. Instructional timing needs to be planned on an extended basis. For example, sounds of the letters b, t, and n should not be a one-day objective.

Children who are faster to comprehend may have a larger objective for a day or week. Response time is keyed to the length of presentation and number of repetition. John, for example, has consistently learned his times tables after twenty presentations of each fact for two days. It would seem reasonable to program his instruction of times tables accordingly.

Accuracy is another consideration. A child with a slow response and low accuracy may need an enlivened or varied presentation and additional motivation.

Slow responses and high accuracy need to be accepted by the instructor as a caution not to expect a faster response if accuracy is desirable.

Quick and accurate responses are, of course, a teacher's dream. This quality of response, if desired for a child, may take longer instructional hours. The value for each task needs to be evaluated.

A child may be quick to respond, but show low accuracy. This can either be accepted as the learning power or time can be spent offering less-cluttered cues, smaller demands, etc. in an attempt to alter this power.

In any case, diagnostic teaching investigates "power of learning" to give the teacher objectives and program limits. Also, it indicates the need for alternative strategies to reap the highest quality response.

Materials: To teach a task, the previously mentioned factors formulate a natural selection process for instructional materials. What material, then, best incorporates the selected mode of presentation and response? Which materials use the most appropriate method of timing and are most adaptive for motivation?

Materials are experimented with on a trial-and-error basis by the diagnostician:

1. Use the material available in a school. These should be indexed.
2. A representation of index materials should be in the diagnostic setting.
3. Materials are tried which most closely approximate the selected sequence and level.
4. Materials are tried that vary with the mode of presentation.
5. Materials are tried that vary with the type of expected response.

Those materials that are selected for program development are those which most closely align themselves to the philosophy of the school and teacher and those which come closest to the natural selection factors previously diagnosed.

This portion of diagnostic teaching is not a program guide, but an "immediate" supplement or assistance for the teacher. Diagnostic information becomes concrete and relevant.

Frank, a second grader, needs additional instruction in learning his sounds. The objective of the diagnostic-teaching situtation is to use a presentation approach, response expectation, motivation formula and material that will encourage Frank to learn his sounds. A learning expectation rate should be established.

During diagnostic teaching, it may be revealed that Frank needs at least 50 repetitions with an opportunity to respond. Also, his pace for responding to cues may be extremely slow, although accuracy is high. He is highly motivated by machines. The diagnostician may suggest a teaching procedure for Frank based on these conclusions.

In summary, diagnostic teaching investigates the surrounding variables in the instructional task presentation and response dialogue. Through trial and experiment, a learning environment description evolves that has been proven effective for a specific task and a specific child. The purpose of this description is to set the parameters for an educational prescription that will assist a child in demonstrating the highest quality of correct responses--learning.

DIAGNOSIS: Summary

Through diagnostic assessment, much information about a child can be gathered and analyzed. The different techniques for gathering such data presented in this chapter--informal and formal testing, task analysis, task process analysis, and diagnostic teaching--each present information uniquely. Whatever method is chosen, the resulting information will have to be synthesized and coordinated so that the prescription formulated from the data will be customized to the child.

The next chapter proposes ways to organize and interpret the data collected in the diagnostic procedure. When that has been done, an educational prescription may be written. Prescription is the next step toward an appropriate educational intervention.

Chapter Three

PRESCRIPTION

Prescription is the step after diagnosis and before programming. It is the focal point in the educational plan where what is known about a child through formal and informal diagnosis must balance with the anticipated learning outcomes for that child. This step is crucial to the success of programming, but is a step that is often overlooked or minimized. It is common for diagnosis to be completed and a move then made straight to a program. In fact, the program may not even fit the diagnosis. When this happens, time spent on diagnosis has been wasted.

Prescription may be viewed as what will be taught (skills, concepts, behaviors, etc.) based on diagnosis and how (materials, reinforcers, methods, etc.) it will be taught. Prescription gives direction to programming in that methods that will probably work are suggested. In addition, criteria for correct performance are decided upon during the prescriptive process. These criteria provide the groundwork for later evaluation. Two sections comprise this chapter.

Organization of Diagnostic Data

A great amount of information may be collected on a child through diagnosis. This section offers a strategy for compiling information in a meaningful way so that patterns of strengths and weaknesses can be analyzed. By coordinating academic and behavioral elements, a picture of the total child can be formed. Needs are then prioritized so that those which are most critical to future success are dealt with first.

Writing a Prescription

Once the basic decisions concerning priorities have been made, actual writing of the prescription is undertaken. This section addresses elements which should be included in every written prescription.

Interpretation of Data

All relevant diagnostic data needs to be organized into categories or levels of functioning. The organizational format may vary with individual circumstances. Perhaps one of the forms suggested at the end of this section will be appropriate, but the most efficient manner for a particular person needs to be developed and modified by that person. The goals in organization of data are:

1. To examine error patterns which appear in the diagnostic data. An area of deficiency on one test may also appear on other tests and informal inventories.
2. To compare informal testing results and results from formal instruments.
3. To formulate a picture of the total child in terms of educational needs, motivation, learning power and capacity and achievement level.

Categories of academic performance may be selected such as math, reading and written language. Addition, subtraction, multiplication and division would further specify categorical areas within the area of math.

Rather than academic performance, it may be beneficial to look at pre-academic areas or processes which are fundamental to later academic functioning. Categories include receptive and expressive language, motor development, etc. This process categorization is an outgrowth of task-process analysis, which is discussed in Chapter Two.

Once the categories to be viewed are determined, it is necessary to consider the diagnosed level of functioning. This information may be available from formal tests in an age score, scaled score, or grade level. Informal results may show the level at which a child is functioning adequately and where he is not. These levels in the different categories will show areas of strength and weakness. In academic areas, they compare skill levels among school subjects. In process categorization, malfunctioning in various process areas is pointed out.

The following are aspects of the child's total functioning which may need to be determined from the diagnostic data:

1. Achievement Level. As noted in the above discussion, the achievement level in various subjects indicates where instruction should begin.

2. Strengths and Weaknesses. While remediation may focus on developing areas of weakness, it is also very important to note a child's strengths. These strengths can be built upon to increase probability of success.

3. Motivation. Observation can give clues about a child's desire to work on certain projects and his willingness to complete what he starts. Whether he is self-motivated or needs external reinforcement may also be noted.

4. Attention. The child's attention span for various types of activities can be estimated through observation and recording of his attentional work time or the amount of time he spends in a particular activity.

5. Learning Rate. Some standardized tests offer exercises for determining learning rate (the period of time or number of trials required to learn something). While no exact conclusion can be drawn, one can estimate whether or not the child will need a great deal of exposure to a skill to learn it.

6. Accuracy. One child may work rapidly but make many errors, another may work slowly but accurately. When this is taken into consideration in prescription, more realistic time allotments and performance criteria may be decided upon.

7. Perceptual Dysfunctions. Severe perceptual problems may be picked up in diagnosis. These should be noted and further examinations completed as necessary. If these dysfunctions interfere with learning processes, prescriptions may be altered accordingly.

8. Sensory-Motor. Sensory-motor information which has been gathered also forms part of the picture. Gross and fine motor skills may have been assessed through formal testing, or observation of behavior and/or academic performance.

Developing a Hierarchy of Need

Frequently the organization of diagnostic information reveals many categories or areas requiring remedial attention. These areas must be placed in order from most critical or most basic to those which can wait until later for remediation. A simplified example in the math area would be a child who has been diagnosed as unable to perform multiplication, subtraction, division, or addition tasks. He has, however, mastered rote counting to 100 and can use one-to-one correspondence to count objects. Putting his remediation needs in sequential order would probably result in a statement indicating addition as the first priority. It is the most basic of the deficits and the other skills listed depend on it.

One must always be aware that the priorities and logic of the person making the prescription may not be the same as those of the learner. Some children do succeed at subtraction before conquering addition. The process of prioritizing will, however, provide a starting point for a remedial program. Another consideration during this step of planning is whether remediation of a particular deficit is actually necessary to success with other objectives. If, in task-analytic diagnosis, some prerequisite skills are found lacking, it must be decided whether these skills are necessary for achievement of the terminal objective. If they are, in fact, crucial, they are noted for prescription. If, however, the child can complete the terminal objective in spite of the gaps, perhaps remediation of those skills is not necessary.

The next step toward writing the prescription is to interface or draw parallels among various academic categories. It is often possible to develop a coordinated prescription which takes into consideration common remediation elements in more than one academic area. As discussed in process analysis, the same process may be breaking down in several areas. Also, remediation for one area may aid development of a skill in another. Take, for example, a first grader who is unable to read and is also diagnosed as having a language disorder. Although the ability to read is the desired academic outcome, the components involved in the language disorder (memory for sounds, memory for meaning and syntax) may comprise the prescriptive elements. Memory for sounds is a fundamental skill for recalling the order of sounds in a phonetic approach to reading; memory for meaning would be reflected in listening comprehension, ability to follow directions, and reading comprehension; syntax or word ordering within a sentence would require memory skill and denote how much of what a child hears he is capable of repeating.

The interfacing or coordination of approach adds strengths to the remedial program. If elements are taught in isolation, the child may fail to associate the individual learning task with overall development. He may learn a skill in one setting but not be able to use it in other settings.

The final step in preparing a prescription is to write out the components which will play a part in actual instruction. These, combined with the programs or methods to be used, will form a complete lesson plan. An approach to preparing this plan is described in the following chapter.

PRESCRIPTION: Writing a Prescription

Decisions Based on Diagnostic Results

The actual writing of the prescription can be viewed as the culmination of the first phase in the diagnostic and prescriptive process. Once this is completed, materials are selected and the instructional activity is set in motion. Evaluation and revisions will continue as the prescription is implemented, but if plans appropriate to the child's needs and characteristics have been made, major revisions will probably not be necessary. In preparation for discussion on writing the prescription, the steps leading to this writing are reviewed.

1. Organize diagnostic information into categories and not by specific learning characteristics about the child.
2. Arrange remedial needs in order of priority. Those needs which are most crucial to further success are dealt with first.
3. Note cases where remediations from separate academic areas can be used to reinforce one another.
4. Write the prescription.

The degree of detail and the elements included in the written prescription may vary somewhat depending on the instructor's needs and the child's situation. The format or lesson plan can also be adapted to suit the individual instructor.

Before writing the prescription and finalizing the behavioral objectives, several decisions about that prescription must be made. These may or may not be written down, but all have a bearing on what the instructional program will entail.

Instructional Approach or Methodology

While it is not the intent at this time to select a specific published or teacher-made program, many choices can be made concerning the basic approach to instruction. Will the instructions be structured or flexible? Will programmed learning be selected? Will the teacher need to invest a great deal of time in management of the child or will that child be able tq manage himself with minimal intervention form the teacher?

Instructional Setting

Will the child be working individually with the teacher, in a small group, or with an entire class?

Preferred Presentation for a Particular Skill

If diagnosis has indicated specific learning channels through which the child learns most efficiently, these may influence the prescription. Auditory learning may be enhanced through a phonetic reading approach, etc.

Types of Reinforcers

A child may be highly motivated to learn; he will be reinforced intrinsically as he progresses through tasks. Another child may need some type of extrinsic reinforcement. While details concerning how this will be set up may be determined in the programming phase, a basic direction is planned in prescription.

Instructional Level

This is determined from diagnostic data. Not only the grade level, but levels of interest and complexity should be considered here. A child's language maturity or social adaptation influence the type of materials which should be selected. A fifth grader may have an interest level or language level similar to a much younger child. While he is working on fifth-grade skills, he may need a program which approaches those skills on a simpler level. Selecting a program which the child will be able to relate to socially may also aid instruction.

Time

Several aspects are considered here. It should be determined how long will the child be involved in instruction (hours, or minutes per day, number of days, weeks, and so on).

Also, within the daily time period, how long will he be able to attend to one activity and how often will the activity need to change to prevent boredom or frustration? Consider, too, how often will the child need to take a break during the instructional period.

Decisions must be made as to the projected length of time required to master the objective. If the date is reached before completion of the objective, the approach may need to be altered.

Rate of Presentation

How fast can the child deal with new material? Will he need a great many examples and activities before he acquires a skill or will he probably learn with fewer presentations?

Auxillary Personnel

Several members of the staff may have the competencies to manage a portion of the prescription. Teams including classroom teachers, school nurses, art and physical education teachers, tutors, and parents, in addition to special educators, frequently implement the prescriptive elements. A vocabulary experience in teaching verbs may be delegated to the physical activity the instructor could build vocabulary by explaining to the child what he is doing. "You're pulling the rope." The child is helped to comprehend through experience. He may also be asked to repeat what he is doing or to answer questions about what he does.

Suggestions for Placement

Perhaps the prescriptor will see a need to place a child in a special class or with a resource teacher. Suggestions concerning this may be included in the prescription.

Elements of a Prescription

After decisions such as those described on the proceeding pages have been made, the actual prescriptive statement can be written. If this is done carefully and thoroughly, the direction for programming and evaluation of progress will be clear. Each written prescription should include the following elements.

Behavioral Objectives

Each skill or behavior to be taught must have a behavioral objective. The objective states what the learner will be able to do when instruction is completed. An instructor has a vehicle for making progress, but without objectives, he does not know where he is going, how he is getting there or when he has arrived. The behavioral objective, then, is a clear, simple definition of what is expected and also provides for ongoing evaluations as the instructor looks for progress toward completion of the objective.

To be useful, a behavioral objective must be stated in measurable and well-defined terms. Action verbs rather than abstract terminology must be used. For instance, when we say, "The child will understand the 'Age of Dinosaurs,'" we have no way of measuring his understanding. A more useful statement would be, "The child will name five kinds of dinosaurs when asked to do so by the teacher."

Three basic components should be present in each behavioral objective.

1. A terminal behavior: What the child will be doing (in observable terms) on completion of the objective.
2. Important conditions: Who will be giving the stimulus for performance (teacher, aide, parent, etc.)? Where will it take place (classroom, outdoors, at seat, in groups, etc.)? What materials will be used (textbook, paper, pencil, chalkboard)?
3. Criterion for acceptable performance: This includes the amount of time the task should take and the degree of accuracy expected. One or the other of these may be emphasized, depending on needs. For instance, a goal for a very accurate, but extremely slow and tedious worker might be to shorten his work time. Another child may work rapidly but with many errors. The emphasis for his objectives would be on increased accuracy.

Task Analysis of Objectives

In diagnosis, tasks were analyzed to find the level at which the child could no longer achieve and to determine what aspects of a skill were causing difficulty. In prescription, tasks are analyzed in order to provide a logical, step-by-step approach to teaching the skill. The basic procedure of formulating the task analysis (as discussed in Chapter Two) is the same for both diagnosis and prescription, but the use is different. Each behavioral objective's terminal behavior is broken down into a hierarchy of component acts. These are arranged from most basic or simplest, to most complex. The terminal behavior is reached upon completion of an orderly progression through the steps with mastery at lower levels before more complex tasks are presented.

The task-analytic diagnosis will have pointed out the segments of the objective which the child can and cannot perform. The prescription will place the child on a level of activity corresponding to the purpose for instruction.

1. Diagnosis may have shown mastery of task A, B and C, some proficiency in D and failure on E. If review is the goal of instruction, prescription may call for activities relating to A, B, or C.
2. Using the same example, the instructional goal may be to sustain or reinforce a task which can be done but not to the criterion for mastery. More activities may be prescribed for task D.
3. If the goal of the prescription is the presentation of new material at a higher level, task E will be introduced.

It is the decision of the prescriptor what the goal will be and at what level of task analysis the student will begin. If it is found during instruction that a jump from one step to the next is too great for the student, a sequence modification can be made. That is, the step which is causing problems can be further broken down or altered for more efficient presentation.

The summary forms beginning on p. 110 (3.1b, c, d) were developed by the staff at the Rocky Mountain Regional Resource Center as a possible way of organizing diagnostic, prescriptive, and programming data. The figures offer a possible way of plotting data and organizing the prescription before moving on to programming and evaluation.

PRESCRIPTION: Summary

Upon completion of the prescriptive phase of an educational intervention the person who will

Name______________________Grade__________ Age__________

Dates of Entry______________________Sex__________ D.O.B.__________

Screening______________Diagnosis______________Prescription__________

AGE AND GRADE EQUIVALENT

Grade Equivalent	Age Equivalent	Chronological Age	Height	Weight	Motor Coordination	Mental Ability	Social Maturity	Speech Development	Language Development	Reading	Arithmetic Reasoning	Arithmetic Computation	Spelling	General Information
12	17													
11	16													
10	15													
9	14													
8	13													
7	12													
6	11													
5	10													
4	9													
3	8													
2	7													
1	6													
	5													
	4													
	3													
	2													
	1													

Mobility	Vision	Hearing	Interpersonal Relations	Screening Profile 1. Screen 2. Plot 3. Draw Average Range 4. Find Cluster Above and Below Range 5. Decide What Should be Done.
				5. Very Superior
				4. Above Average
				3. Average
				2. Below Average
				1. Very Defective

Fig. 3.1a

Example of Kirk Profile

Name ______________________________

Address: Phone:

BIOGRAPHICAL

Father's Name	Occupation	Grade Completed
Mother's Name		
Number of Brothers	Number of Sisters	Position in Family
Age When: Walked	Talked	
Physical Difficulties		
Vision	Hearing	

Describe Inter-Relations in the Home:

Child - Parent

Child - Child

Parent - Parent

Impressions of Child:

Observation Summary

DIAGNOSTIC SUMMARY

	ABILITY	ACHIEVEMENT	ACADEMIC SURVEY	LEARNING OPERATIONS
Test				
Date				
Form				
Low Score				
Percentile				
Grade Equivalent				
Mental Age				
Specific Problems				

Fig. 3.1b

RMRRC Forms to Accompany Profile

NAME:

PRESCRIPTION

Terminal Objective

Enabling Objective I

Program Description	10	
	9	
	8	
	7	
	6	
	5	
	4	
	3	
	2	
	1	
	0	
Baseline:		
Time		1 2 3 4 5

Enabling Objective II

Program Description	10	
	9	
	8	
	7	
	6	
	5	
	4	
	3	
	2	
	1	
	0	
Baseline:		
Time		1 2 3 4 5

Fig. 3.1 c

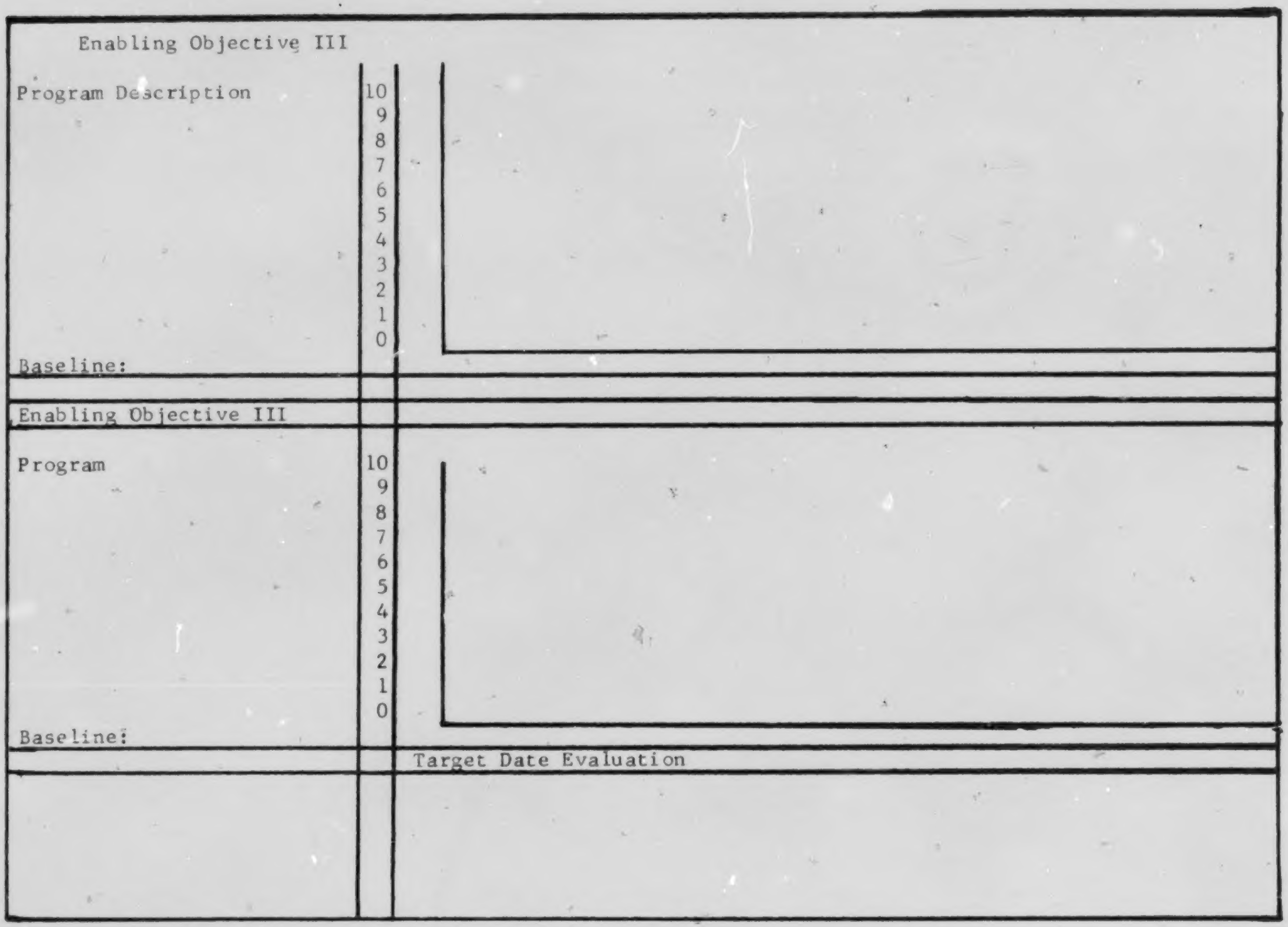

Enabling Objective III
Program Description
Baseline:
Enabling Objective III
Program
Baseline:
Target Date Evaluation

Fig. 3.1d

be working with the child should have an accurate picture of the child's characteristics and a workable approach for making changes in the child's repertoire. The original prescription may be altered as ongoing evaluation shows need, but the user should now have a place to begin.

The decisions as to what specific materials and exercises will be used are not made until the programming phase. The prescription should be clearly defined so that appropriate materials can be selected to match the child's needs.

Chapter Four

PROGRAMMING

The programming phase of instruction involves the selection of materials and methods to be used in carrying out the prescription. In the past, programming for handicapped children has often been inadequate. Materials have not been matched to prescriptions nor have appropriate programs been followed through to completion. The purpose of this section is to aid the trainee in selecting and using programs which will facilitate the completion of prescribed objectives.

Strategies for modifying existing programs from a variety of published materials and techniques are presented. These will offer the programmer alternatives which may be useful in planning. The actual program selected may vary for a specific prescription. Flexibility allows for variations in budget, materials available, time and instructor's degree of training in use of materials and any other limitations which may influence a particular situation.

The programmer, then, will not be applying standard "recipes" to problems but will be following procedures which will hopefully lead to optimum planning and instruction for the individual child. The following three sections are included in the Programming Chapter.

Scope and Sequence

Optimum use of materials depends on selecting those most appropriate in content and level. If a program does not deal with the necessary tasks or if it is too easy or too difficult, its value is decreased for the child. Scope and sequence tell the programmer what is covered in the material and the order in which skills are presented. This section further defines scope and sequence and offers suggestions for determining the scope and sequence of published materials.

Instructional Materials and Programs

This section presents a variety of materials and techniques which may be used and modified to fit specific cases. Suggestions for adapting materials are also offered. A chart showing types of materials available from a variety of publishers offers the programmer many alternatives to examine. In addition, criteria for selecting published materials are listed to guide the programmer in choosing the best possible approaches.

Instructional Methods and Techniques

In addition to materials, instructional approaches need to be selected in porgramming. Methods and techniques which have proven useful in many situations are described in this section. The programmer and/or instructor may want to adapt one or more of these in dealing with a student.

PROGRAMMING: Scope and Sequence

Definition of Scope and Sequence

Scope refers to the type of content covered in a particular instructional program. It includes the skills studied and the course content. Sequence is the order of presentation of those skills. Knowledge of scope and sequence of programs is essential to anyone using any instructional material in any curriculum area (reading, math, spelling, language, perceptual and motor development, etc.).

Diagnosis includes checking a child's level in the sequence of skills and locating gaps in his development. Recommendations can be made for remediation of deficits and over all achievement statements can be developed. Once these statements have been made, programming involves comparing the child's instructional needs to available materials. The scope and sequence of the materials must match the child's needs. In other words, if the child does not know short vowels in reading, then the scope of the materials selected must include short vowels. The sequence should be paced at a rate which will make success possible. One which moves too rapidly will be of little value. Also to be considered in sequence is the age level to which the material is directed. A remedial unit on short vowels written for twelve-year olds may have little meaning to a second grader.

Need for Scope and Sequence

A parallel between scope and sequence and task analysis can be drawn with scope as the task and sequence as the orderly progression of steps which leads to completion of the task. In this light, the value of scope and sequence becomes one of awareness of the prerequisite skills needed to function at a particular level.

It is not sufficient to become familiar with the scope and sequence of one particular grade level only. The fifth-grade teacher who is not familiar with earlier and more advanced levels will be handicapped. She will not know how to teach the child who is functioning below grade level nor the one who is above grade level. Special educators dealing with children whose achievement levels may be extremely varied should be aware of the entire scope and sequence of content areas from readiness level on. In this way they can present skills in an orderly fashion and progress through the various levels as they move toward remediation of their students' problems.

Locating Scope and Sequence in Published Materials

In addition to knowledge of different levels of scope and sequence, it is also important to know the scope and sequence of different series (reading, mathematics, etc.) so that when a shift is made from one series to another, the teacher will know how and when it is appropriate to bridge back and forth from one series to another.

The following list includes some suggestions for locating scope and sequence of materials:

Published Materials

1. Scope and sequence charts provided by publishers on request
2. Tables of contents in textbooks
3. Instruction sections of teachers' manuals.

General Materials

1. District and state curriculum guides
2. Teacher-made outlines of instructional units
3. Task analysis hierarchies.

Modifying Existing Programs

Reasons for Modification

When a prescription has been written, appropriate teaching materials are selected which will fit the prescription. Often, no existing, published program will exactly match the needs of the prescription. In this case, the teacher has three alternatives:

1. Prepare an original instructional program;
2. Use an existing program which may not be completely appropriate;
3. Modify existing programs to meet the needs of the child for whom the prescription has been written.

There are circumstances in which each of these alternatives may be appropriate, but there are also drawbacks to the first two. Making original materials can be very time consuming. However, if the content is such that no available materials will serve, the teacher may feel the time spent if justified. The school budget may prohibit buying published materials. The teacher may then make similar, less expensive original materials.

When school districts select materials, they often set restrictions on what supplements can be used and specify that the "basal" text must be used with all students. Experimental situations where success of new programs is being tested might also place limits on what materials can be used in a classroom. In these two situations, the teacher will find herself tied to a program which may not meet the needs of all her students.

The most practical solution to the problem of finding materials to match programs is the third alternative above. The greatest advantage is that probably a program can be located which is appropriate in many ways, so a large part of it can be used without modification. If limitations have not been placed on the teacher, there is a wealth of materials to draw from and the teacher can glean the best from several different ones in making programming choices. Each publisher offers a different approach, but many use basically the same skills, scope, and sequence. The teacher may find it profitable to buy a few copies each of several equitable programs rather than purchasing many copies of one set of materials. With some children, exposure to a variety of approaches may clarify concepts and offer variety as a form of motivation. Other children will benefit more from one basic approach with supplemental material following the same pattern. Which approach is best for a particular child is a decision the teacher must make when planning the child's program.

Another consideration is the amount of exposure needed before a concept is learned. This cannot be determined explicitly before instruction but the teacher will be able to make some general choices. The teacher will know whether the child will probably need a great deal of repetition for mastery or will be able to move rapidly and acquire concepts quickly.

A published program may have a great deal of supplemental equipment available such as cassettes, language master suggestions, filmstrips, etc. If funds are not available for these materials, the teacher may still want to buy the basic program and enrich it in other ways. On the other hand, the teacher may have access to tape recorders, language masters, kits containing puppets, picture cards and other multisensory stimuli. Any of all can be adapted to fit the program selected. For example language master cards can be made to supplement a workbook page on short vowels. Also, picture cards from the Peabody Kit can be used for activities not suggested in the kit. Use of puppets from any source is limited only by time available and the creativity of the teacher and student.

Steps in Adapting Materials

Several basic steps may be followed in adapting materials.

1. Diagnose needs and determine the instructional level of the child.

2. Find materials which present the skills to be taught.
3. Decide whether the interest level and age level of the approach are appropriate (books can be found which present short vowels in a manner directed to first graders, fifth graders, low-achieving junior high school pupils, etc.).
4. Make an initial guess as to how much repetition will be needed. This may affect choice of materials as some programs repeat more than others. It may be decided to select:
    a. a highly repetitive program and not use all the examples;
    b. a fast-moving program supplemented with other materials;
    c. a program which will probably nearly match the pace of the student. These choices will be evaluated during instruction and modified according to the changing needs of the child.
5. Decide whether one basic approach will suffice or whether it will be desirable to use sections from many books in teaching a skill.
6. Review the selected programs and decide what other modifications will be needed, e.g.:
    a. supplemental activities using language master, puppets, tape-recorders, etc.;
    b. changes in type of response from the child, e.g., acetate sheets rather than writing directly in the book, verbal responses when written may be called for by the manual, tape recorded responses--these can be varied to meet the needs of the child and the physical situation and will not always follow the directions in the manual explicitly--if a program calls for use of a tape recorder, but this causes too much distraction in the room, written responses may be substituted--etc.;
    c. give more directions than are specified in the teacher's manual;
    d. use reinforcers not suggested in the manual.
7. Ongoing evaluation is an essential part of the success of any program. Once the instructional program has been set in motion,

progress checks will bring out needs for further modifications in the instructional program.

Ongoing Evaluation of Programs

Every program, whether academic or behavioral, must be evaluated periodically to insure that progress is being made. Behavioral objectives are important in this evaluation as they include criteria for final performance mastery. When a child can perform a task at a mastery level, he goes on to the next task in his sequence. Checks for progress toward a goal are important for four reasons. These are:

1. If progress is very slow, modification of the program is necessary.
2. When evaluation is frequent and the child is involved in noting his improvement, this involvement often serves as a reinforcement and leads to more improvement.
3. The teacher is kept alert to the goals of the program at all times.
4. Special programs can be justified if actual progress can be shown in a concrete manner.

The frequency of progress checks will vary according to individual circumstances. Some children need more frequent reinforcement than others. Checks may occur more frequently early in a program than after a routine is established.

Records kept and forms of testing depend on the needs of the situation. A graph or chart may be used to mark scores, percentages, or speed of performance on daily or weekly tests. These tests may be informal or structured. This charting will be most valuable if it does not become tedious and time consuming. The goal is to have a view of the child's movement through a program, not a series of elaborate charts. A file or folder should be kept for each child. This allows easy access to records by both teacher and student.

Task analysis sequences can be adapted to frequent progress checks. A listing of all steps toward the terminal objectives may be written on a chart. As each small step is mastered, it is checked off. The date of completion may also be recorded. This type of recording offers a concise view of where the child has been and how far he still has to go.

As tests are administered and recorded, the movement toward the goal must be analyzed. If progress is slow, perhaps the task is too difficult or the material is not appropriate for the child. Changes, based on probable reasons for failure of the program, need to be made. If progress is rapid at first but begins to taper off, the program may have become boring or the child may be ready for more difficult tasks.

Using Commercial Programs and Materials

Many publishers produce instructional materials. An exhaustive list would fill volumes. Appendix F contains a partial list of companies which manufacture educational materials. Although many of these companies produce several items, only one representative item has been selected for each.

Check marks under the subheadings signify that materials are available for special education with emphasis on readiness, language arts, or mathematics. Definitions of the terms on the format section of the chart will follow the chart itself. The company may publish materials in unchecked subheadings, but not expressly for special education.

Evaluation of Published Programs

The almost limitless amount of published instructional material available makes evaluation and selection potentially an overwhelming job. Advertisement and packaging by publishing companies may make programs look attractive when in a particular school setting they would be ineffective. The following pages offer criteria to be considered when selecting and evaluating programs for use in a school. A sample check list is offered to help objectively meet the needs of the situation.

The following are items to consider in the evaluation of a program. The rating sheet was based on these items.

1. Primary Input and Output: What is the primary input of the program? It is visual or auditory, or is it a combination? For the most efficient learning to occur, there must be the best possible match between the program and the learning style of the student.

2. Skill: What is the primary skill involved in the program? Some skills are attention, identification, discrimination, association, memory, and sequencing. Some programs will contain all of these, others will contain one primary skill. Select a program based on the prescription that will match the learning style of the student.

3. Philosophy: Does the program fit the philosophy of the teacher, school and/or district? Materials are more effective if the teacher agrees with the basic philosophy of the approach.

4. Interest: Is interest build-in in the program or will other reinforcers have to be provided to keep the student motivated? Some programs have built-in reinforcers and others need additional reinforcers.

5. Cost: This is a factor when making purchases within a budget. Many programs may just be a series of directions which can be of very low cost or no cost at all.

6. Placement Tests: What placement tests are available? A program needs to have some objective way to measure the student's present skill level. The placement test will help determine if the student can profit from the program or if he has already mastered the program material. The placement test does not have to be long and detailed; it need test only the objectives.

7. Service: Is the program constructed of durable materials? If not, is it easily repaired or replaced? If the program uses a machine, is the service available locally or regionally or does it have to be shipped

back to the factory? What are the possible service costs? Are the materials consumable, and are they expensive to replace? Can materials be used with acetate overlays?

8. Hardware Types: Does the software match the hardware? For example: If you have a reel-to-reel tape recorder, you do not want cassettes. There are many other areas where you need to match software (the program) to the available machines.

9. Teacher Background: Does the teacher have the experience and training necessary to use the program? Programs are classified in one of three areas. 1) The program can be used with no training. The teacher picks up the program and begins. 2) It can be used with little formal training. The teacher in this case may need to spend alot of time reading the manual or may need to observe someone using the materials. 3) It can be used only with considerable training. A workshop must be conducted with opportunity to use the program under direct supervision.

10. Simplicity of Directions: Is the program simple for student or teacher to follow? A series of complex steps for either a teacher or student may not be followed accurately.

11. Scope and Sequence: Will the material presented meet the instructional needs for which it is to be used? Is the level appropriate for the child? Are there small sequential steps with mastery built-in?

12. Progress Checks: Is progress easily measured? A program is not efficient if it takes much of the teacher's time measuring progress. Also, a child feels a sense of accomplishment when he sees himself making progress.

13. Appropriateness of Vocabulary Level: If the program is to be read and followed by the student, is the vocabulary at the level the target student can read?

14. Format: Is the format clear and uncluttered? Is there too much on a page?

15. Population: Is the program for use by one student at a time? Can students take turns with the program? Can three or more students work on it at the same time? Will the students be able to work independently or will they need teacher supervision and instruction?

16. Physical Setting: Where can the student work? Can he work in the regular classroom where normal distractions might occur? Does he have to be isolated from distraction? Will the program distract other students? Will an electrical outlet be needed?

17. Time: How long will a student be working in the program? Will he be in it 180 days, one-half hour per day or is it very specific to a task and only one week long?

18. Construction and Duplication Ease: If a program is difficult to construct or takes too long it may never be completed.

19. Aide or Other Help: Can the program be used by an aide? It would be helpful to know if an aide can use the program with minimal training and supervision.

20. Parent Involvement: How are the parents involved? Are ways provided for parents to follow-up at home? Can parents be involved directly with the program or conduct the program?

21. Consideration of Media Center: Is the program used continuously or is it used only once a year? Will all parts be used by the teacher or will she need access to the program for reference? Some programs would be better utilized if they were placed in the media center, as they could be purchased with funds other than the teacher's own budget and used as needed.

These guidelines can aid the person selecting materials, but the final test will be in whether or not the program actually works. This can be determined only after use. Before purchasing materials, it would be wise to try them out with students. Media centers have many programs which can be checked out for use on a trial basis before final selection and purchases are made. Also, displays of instructional materials at state teachers' conventions offer an overview of many types of programs. The rating sheets that comprise Figure 4.1 may be used to summarize evaluative information concerning published programs.

Using Support Services

Some handicapping conditions may be encountered in the school for which the programmer is unable to prescribe adequately. It is, therefore, necessary to become familiar with agencies and individuals who can offer information or services to aid these children. Local school districts and state boards of education have many back-up services. Private agencies also may be able to provide assistance. Directories listing these agencies in specific geographic locations are often available at school district offices. Regional Resource Centers also have access to names of supportive services which may be useful.

As specific names of persons and agencies are located, they may be placed on a chart similar to the one in Figure 4.2. This will provide the user with a resource file of persons who can be of help in special cases.

PROGRAMMING: Instructional Methods & Techniques

Guidelines for Implementing Methods and Techniques

Instructional methods and techniques are tools designed for educational programs. More often than not they are modified according to individual needs of students and teachers, and to the environment. Methods are specific instructional skills that are not a function or a basis of prescribed media. Some commercial programs have prescribed methods incorporated within them. Most methods can be used with a variety of materials. Some methods need no materials.

Name of Program________________________________Date__________

Rated by________________________

1. What is primary in-put?

visual   auditory   tactile/kinesthetic

verbal   visual motor

2. What is the primary skill involved?

Circle 1 as being primary and 2 and 3 as being supporting, with 3 as less supportive.

	Visual	Auditory
association	1 2 3	1 2 3
attention	1 2 3	1 2 3
identification	1 2 3	1 2 3
discrimination	1 2 3	1 2 3
memory	1 2 3	1 2 3
sequencing	1 2 3	1 2 3
other______________	1 2 3	1 2 3

3. Does it agree with philosophy (yes or no) of

teacher_____school_____administration_____district_____

4. Interest

high 1 2 3 4 5 low

5. Cost

____

Fig. 4.1

Program Rating Sheet

6. Placement tests available

Yes_________No_________

7. Service (circle)

durability: high 1 2 3 4 5 low

consumable materials yes no

8. Does new program match existing school hardware?

Yes________No________

9. Teacher expertise

no training needed 1 2 3 4 5 training needed

10. Are directions simple enough to be followed by the student?

Yes__________No__________

11. Appropriate scope and sequence?

Yes__________No__________

12. Progress checks

appropriate 1 2 3 4 5 inappropriate

13. Is the vocabulary level appropriate?

Yes__________No__________

14. Is the format clear and uncluttered?

Yes__________No__________

15. Number of students (circle)

one-to-one small group classroom

16. Type of setting (circle)

classroom isolated carrel

17. Time (circle)

day week month year

hours per day: 1/2 1 1-1/2

Fig. 4.1
(continued)

18. Is the program easily constructed and duplicated?

Yes__________No__________

19. Aide use

high 1 2 3 4 5 low

20. Parent involvement

high 1 2 3 4 5 low

21. Suggestions for purchase (circle)

Individual classroom Media center

Fig. 4.1
(continued)

Handicapping Condition	School	District	Region	State	Personnel
☐ hearing impairments					
☐ vision impairments					
☐ trainable MR					
☐ educable MR					
☐ severely MR					
☐ learning disabled					
☐ emotional disorders					
☐ physical handicaps					
☐ language & speech disorders					
☐ medical services					
☐ vocational guidance					
☐ psychologist					
☐ psychiatrist					
☐ neurological impairment					
☐ others					

Fig. 4.2

Cumulative Form for
Information on Community Support Services

Techniques are specific behavioral management schemes used in modification and/or adjustment of given patterns of behavior. Thousands of group and individual activities can evolve from basic methods and techniques.

Listed below are some guidelines for implementing methods and/or techniques:

1. There are no magic solutions to children's specific difficulties. Several methods or techniques may be used before a child experiences success.
2. Since children enjoy games presented without pressure, they are more likely to succeed if activities are presented more as an adventure than through formal lessons.
3. Methods, techniques, materials, and activities should be selected to overcome a specific problem, not to serve as busywork.
4. Children and teachers should be given a choice of what they want to be involved in --what they would enjoy and what they feel may help them.
5. Don't let a technique or method lock in the programmer--be adaptable and creative for each child.
6. Don't overuse techniques or methods in successes or failures; novelty may increase motivation for some children.
7. Don't substitute new methods, techniques, or materials for those that a child really enjoys.

Before a new program is implemented for a child, presently used methods, techniques, and materials should be evaluated. Determine what is being taught, at what level, through what method, and how results are being measured. Textbooks, manuals, and technical instructions used by the child should be examined. Materials, methods, and techniques may be appropriate for area(s) of difficulty, but may be utilized incorrectly. Possibly the existing program needs to be modified to be more effective. If existing tools are found to be inappropriate for a child's needs, then new tools need to be brought into the program.

Effective methods and techniques can tie together all aspects of learning theory related to motivation, reinforcement, retention rate, and transfer. They need to relate to a student's modality and style of learning as well as his involvement and commitment to the task.

In Appendix E, several methods and techniques which have been found to be helpful by teachers are introduced. The materials selected through strategies in the previous section will be presented to the child in a manner which fits both the child's needs and the teacher's style and strengths.

In order to facilitate location of specific methods in this section, their titles are listed here.

1. Behavior Modification
2. Fernald Reading Method
3. Spalding Phonics Method
4. Gillingham Stillman (Orton) Phonics Method
5. Monroe Phonetic Method
6. Gates Reading Method
7. Stern Arithmetic Method
8. Lehtinen Perceptual Method
9. Barry Language Approach
10. Myklebust Language Approach

PROGRAMMING: Summary

Many alternatives have been suggested in this section. While the lists are by no means exhaustive, it is hoped that they will offer a starting point for or an extension of the reader's repertoire of available resources. As more and more approaches are examined, the programmer will become more skilled in selection of appropriate materials, thus decreasing trial-and-error selection.

Chapter Five

EVALUATION

Evaluation of educational intervention may be compared to reading the instrument panel on a boat. The panel has indicators of depth pressure, a gas gauge, a speedometer and a barometer. By looking at the panel, the captain can see how things are functioning and can make adjustments as needed to keep his ship on course. In a similar way, evaluation in education indicates the "speed" at which a task is moving, the depth of that task, and whether or not progress toward a goal is being made. Just as a boat could not operate efficiently without an instrument panel, an educational program cannot operate efficiently without evaluation.

By carefully determining evaluative strategies before beginning a program, the instructor can maintain direction in working with a child and can make adjustments when progress slows below expected rates. Both short-term or ongoing evaluation and long-term, final evaluation need to be considered. Weekly, daily, or hourly evaluation keeps the educator's "ship" on course and the long-term or final evaluation determines whether the destination has in fact been reached.

The demand for educators to be accountable in their work with children is emphasized as never before. Concrete, observable movement is stressed and program adjustment is expected when positive movement does not occur. This accountability shifts the responsibility for success away from the child and onto the teacher, the program, or both. Many feel that this shift was necessary because the teacher is in a better position than the child to make changes. Through careful evaluation, many of the failures which children experience in nonappropriate instructional situations may be avoided.

The following sections are included in this chapter.

Evaluative Tools

This section describes four tools which can aid preparation of the evaluation phase of the instructional program. Testing, observing and recording procedures, when paired with clear-cut goals, objectives and teaching strategies, can complete the systematic approach to education as presented in this text.

Behavior Measurement

Use of behavioral graphing and measurement techniques are described in detail. Various approaches to counting behavior are defined and evaluated.

EVALUATION: Evaluative Tools

Tool #1 - Testing for Evaluation

Testing for evaluation is based on the educational prescription and results are compared to the original baseline information. From the prescription comes the behavioral or instructional objective. Within that objective are the performance criteria: task, acceptable accuracy, and time schedule. From the baseline or original data gathered from screening and diagnosis, the performance level of the task before intervention is derived. (It is by comparison of the original performance with the present performance that progress or the lack of progress can be assessed.) Therefore, if testing is to be the tool for evaluation a "test" must be designed and administered before the intervention.

In some cases--if diagnosis has included several tests with a standard score and the test does allow for readministration--the evaluative test is already established. This method can be used to evaluate long-term or terminal objectives. When using an overall profile, assessment may be administered at the beginning, the middle, or the end of the year.

In most cases evaluation and accountability are desirable while the program is in progress. Then if adjustments are needed they can be made before much time is lost. Because testing for evaluation occurs frequently and is directly related to specified items, a brief test is the best tool. It should be brief both in number of items and time. Then a more precise evaluation is possible.

Test Making Procedure

1. Decide what is to be tested. This is the immediate instructional objective or steps of the objective subject to instruction.
2. Decide the time table for administration of the test. Tests can be administered twice daily, daily, weekly, monthly or whenever it is most appropriate for the objective and schedule. The time schedule limits the objective portion to be taught and dictates number 3.
3. Decide what and how many items would most effectively measure the objective. Only the items that have been the target of instruction should be tested. The number may vary. If only five things have been taught, for instance, they can be presented a number of times so that the total test item number is 15 or 20.
4. Decide the mode of test administration and test response. The test may have an oral, written or a demonstration demand. The responses may be:

Oral response

Give a full essay-type answer
Complete a sentence
Make a choice from alternatives
Read a list
Explain an action or word

Written response

Write an essay
Fill in the blank
Make a choice from a multiple list
Match items
Draw an answer
Copy

Motor response

Follow a verbal command
Demonstrate a picture of an object or an action
Copy a demonstration

5. Decide the *criteria* for a successful or acceptable performance. This includes the length of time allowable, the acceptable accuracy and how accuracy is assessed. One example of a test using these decisions is in the case of Harry, whose instructional objective stated: "Harry will read 15 words from the total Dolch sight word list each week with 85 percent accuracy."

    What: The Dolch Sight words
    Timetable: At least weekly (the teachers may decide to make a daily check as well)
    What and How Many Items: The 15 words given each week
    Mode: Demand: word list shown
    Response: read list
    Criteria: Time allowed: Fifteen minutes or one word per minute, with thirteen or more words read correctly.

Harry can now be tested weekly in the same uniform manner. At the beginning of each intervention series the teacher should give a test so that the results can be compared or the program changed if progress is not made.

If Harry had scored 2 on the pre-test, then a score of 13 on the post-test evaluation shows a great deal of progress and success for the method of instruction and the child. Or if on the pre-test Harry scored 15, the criteria was already met and the correct words could be eliminated from the instructional sequence.

Use of Results

An evaluative test, if constructed to performance criteria, tells how *valid* the criterion and objective are for the *child* *at* *the* *time* of evaluation.

Validity can be indicated in several ways. The program is valid if:

> the objective has been met or progress has been made; the program sequence should be continued if progress has been made.

The student should progress to a new objective if the previous one has been met.

The program is invalid if:

the "behavior" is below the baseline; if the "behavior," having risen above the baseline, has started to plunge downward.

Determining the reason for the lack of loss of progress helps decide the next course of action. This determination is made by the instructor based on clues observed throughout the intervention.

The objective should be dropped if:

the objective is too difficult; if prerequisite skills need to be learned first; if the objective proves unimportant; or if the student has lost interest or cannot be motivated.

The objective should be reconstructed if the program sequence is correct but the instructional or reinforcement schedule is not successful.

The objective should be reevaluated if:

there is no observable progress, or materials and/or activities that are appropriate are not available.

Tool #2
Program
Monitoring

In many cases daily or weekly testing is unrealistic. The teacher's day, in most cases, would have to be twice as long if each child were evaluated on that basis. An alternative is a program monitoring system that requires a tallying of some sort for each intervention and dates or program points that have been chosen for testing evaluation. However, use of these procedures puts a demand on programming. The task to be taught has to be task analyzed and the task sequence followed exactly.

Programmed learning, requiring a written response as the child works independently, is an example of built-in monitoring. Another method of daily monitoring is a daily anecdotal record. This is most appropriate for a behavioral objective of reducing inappropriate behavior such as fighting, thumb sucking, or fantasizing.

Anecdotal records can prove to be very valuable. Incidental information may provide a clue to an instructional or behavioral problem. Often an interaction will occur and not be recorded --only to have the significance become apparent later. When that happens the exact sequence of events, the time and the effects of the events are not quite as clear.

When monitoring a child who is not accepted socially by his peers, spending three minutes a day evaluating his behavior could prove invaluable. One word jotted down throughout the day as events occur may trigger the memory for the evaluation period. Events should be recorded daily whether they appear significant at that time or not.

Example: Barbara did not associate with her classmates. Initial baseline data obtained during a three-hour period on three occasions indicated Barbara did not at one time talk to her classmates or play with them. During each observational period she was approached at least once by one of her classmates. Although it appeared there was no information to record, the teacher kept anecdotal records. Three weeks later another observational account was made.

Barbara played on the outskirts of the group but responded with laughter when the group did. What caused the gradual change? The teacher checked the anecdotal records for some consistent clue. One boy, Mark, had talked to Barbara each day, but she had not responded to him directly. The teacher, however, placed Mark next to Barbara, sent them on errands together, and allowed time for interaction. The next observation account showed Barbara was taking more interest in the group and talking occasionally to Mark.

Anecdotal records supplied Barbara's teacher with valuable information. She made an assumption from that information and adjusted Barbara's situation. If the adjustment had not proven successful, further anecdotal information and investigation would have been necessary.

Although program monitoring alleviates the necessity for frequent test evaluation it does not eliminate that procedure. The testing tool provides a solid base with which to compare baseline data.

Tool #3
Observation

Evaluative observation should begin in the educational treatment process at the same time as screening and diagnosis. A baseline of behavior is obtained. A baseline is a record of a behavior's frequency, duration or nature before an intervention or remediation. It gives a base with which to compare later observation. A post-observation would indicate little without that base of comparison.

Example: Charles was observed in the classroom in March. In September Charles' teacher had reported that Charles was constantly moving and out of his seat. The teacher had begun working in October on keeping Charles seated. The March observation revealed that during a three-hour period Charles was out of his seat four times (frequency) for a total time of fifteen minutes (duration). This information was useful to the teacher because she could compare it to the baseline obtained in October. (During October, Charles' average time out-of-seat for three hours was 26 times for a total time of 1 hour and 44 minutes.) Out-of-seat movement had decreased.

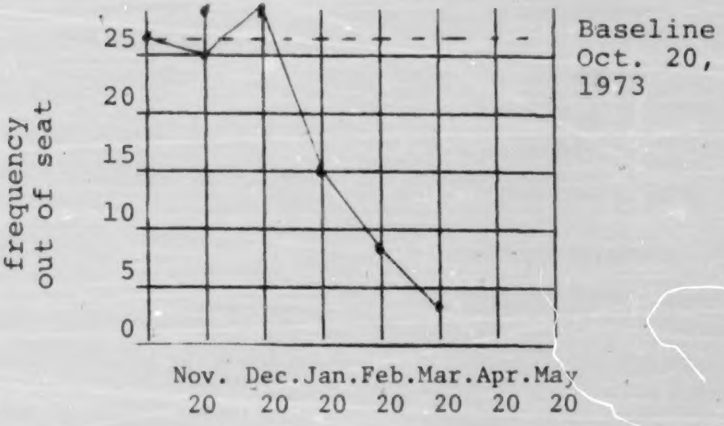
Making a baseline involves the following steps:

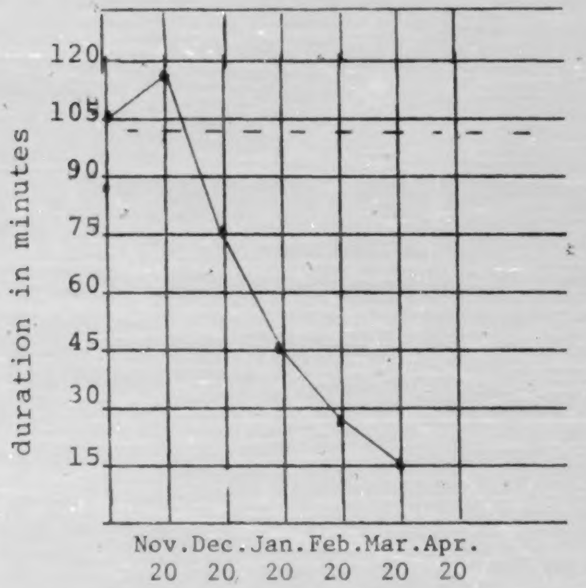
1. Determine the program objective (in this case, reduce out-of-seat behavior).
2. Observe for frequency and/or duration.
3. Make three separate observations and find the mean performance of these three. (Charles' teacher observed Charles for three days in October. He was out of his seat 26 times the first day, 27 the second,

and 26 the third. A mean of 26 was established. At the same time she kept track of durations.)

4. Record the mean and the method of obtaining that mean.
5. Make a baseline statement and graphs for reporting changes observed.

Charles' graphs might be made like this:





Note that Charles' baseline is indicated by a dotted line at the beginning of the graphs. The line is continued across the graph for each reference.

Evaluating Observation

When evaluating for progress, two procedures should be followed. First, the same situation --such as in the classroom or on the playground --and a similar time sample should be used. Secondly, the same observational procedure should be used. If frequency was tallied, it should be tallied again. Each procedure should be plotted on a designated graph.

Evaluate the flow of the plotted line and compare each mark to the baseline. The line may indicate frequency or duration of a behavior. It would be desirable for the flow to move above the baseline if an increase in behavior is the program objective. Conversely, it would be desirable for the line to flow below the baseline if a decrease in behavior is the program objective.

> When the flow of the graph is moving in the desired direction (decreasing or increasing target behavior) the intervention should be continued.
>
> When the flow of the graph moves negatively above the baseline or below the baseline opposite of desired behavior, the intervention or program should be investigated and most likely altered.
>
> When the flow of the graph is static or nonmoving, the intervention should be altered.
>
> When the behavior is plotted at zero or at the desired number, the program may be discontinued or a program for maintaining the new behavior may be initiated.

Methods of charting observations are more thoroughly discussed in the next section, Behavior Measurement. However, because behavior measurement is the fourth tool of evaluation, the following brief outline of the types of measurements that may be used is included in this section. Following the outline is Figure 5.1, a chart on methods of behavior measurement.

Tool #4 Behavior Measurement

1. Frequency counts noncontinuous behavior and is used for behavior ratings. A graph form should be used. Frequency counts are helpful for observational evaluation.

2. Rate counts for the frequency of a behavior within a time period. A graph recording form should be used; divide the frequency by the time. Rate is helpful for both observational and testing evaluation.

3. Percentage counts percent of correct and/or incorrect items for a completed test. Again a graph should be used for this measure. Divide the number of correct items by the total number of items and multiply by 100. Percentage is helpful for observational and testing evaluation.

4. Duration counts the length of time behavior occurs within a time frame. A graph may be used to record the information. Divide the total time observed into the times the target behavior occurred and multiply by 100. Duration is helpful for observational evaluation.

EVALUATION: Behavior Measurement

The Graph

Education, particularly special education is in an era of accountability. No longer can a program be assessed by descriptions of a good year or a bad year, but data must be available to validate those statements.

In the past, frequency, duration, rate and other such terms have had a clinical connotation. Collecting and compiling this type of information was thought to be too time consuming as well as unhelpful for a teacher. An understanding of the application of these measurement techniques has shown their value for all teachers. The measurements are valuable because

	frequency	rate	percentage	duration
what	counts noncontinuous behavior	counts when behavior occurs (frequently) within time period	counts percent of accuracy of completed task	counts the length of time a behavior occurs within a time frame
time sampling method	tally	fixed time	tally	fixed time or tally
time period	select for minute, hour, day	short period of time directed to sample	select according to when task is to be accomplished	begin time when behavior begins; randomly check for behavior
how	count frequency	count frequency in elapsed time	count number correct; count total	determine time observed and determine length of time of behavior
record by	mark frequency of behavior	divide frequency by time	divide correct behavior by total behavior; miltiply by 100	divide elapsed time into target time; multiply by 100
use to	count number of times out of seat, fighting, reversals, errors in computation, etc.	measure speed in writing, reading, speaking, calculating	measure accuracy of mathematic problems, reading sounds, etc.	measure length of appropriate or inappropriate behavior, e.g., thumbsucking, rocking, preseveration
examples	Frank has been ripping up his papers throughout the day. His baseline for this behavior is 15 times per day. The teacher would like to decrease this to zero. Frank is helping with the recording.	Merrill does not know his initial consonants. His instructional objective is to be able to read aloud 26 consonant symbols within a one-minute period. For a progress check, his number of responses is recorded for a one-minute period daily.	Tom's terminal instructional objective states that he must complete 20 addition problems with an 80% accuracy. His baseline accuracy was 10%. His daily score is recorded.	Susan rocks in her chair. Her baseline had her rocking behavior at 11 minutes out of 15. Her behavioral objective is that her rocking behavior shall decrease to no more than 2 minutes of each observed 15-minute period.

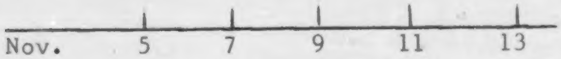
Fig. 5.1

Methods of Behavior Measurement

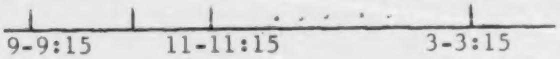
they provide necessary data for teachers to confirm the validity of their program.

The key tool for measurement is a graph. A graph has two axes: the horizontal axis ——— usually indicates the time over which the recording is made. The time is measured by days, weeks, months or by various interval schedules. For example:

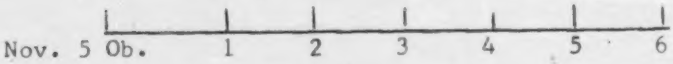
days


Nov.
5
7
9
11
13

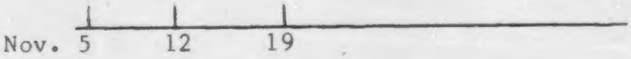
15-minute time periods during a day


9-9:15
11-11:15
3-3:15

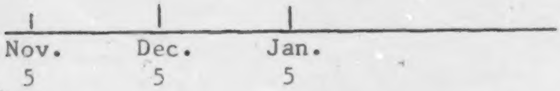
order of observation per day


Nov. 5
Ob.
1
2
3
4
5
6

week

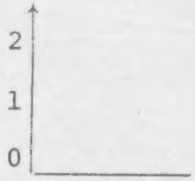


months

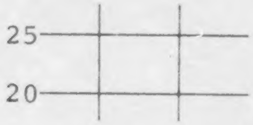

Nov.
5
Dec.
5
Jan.
5

The time frame is selected according to the purpose of the graph. One limitation is necessary: the intervals should be equal time frames. Days should not be changed to minutes or to weeks. Without equal intervals the graphic representation would be distorted.

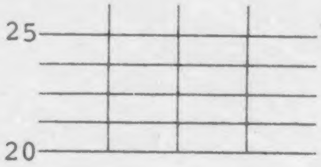
The vertical axis | indicates the unit, quantity or quality being measured. Behavioral objectives call for an increase or decrease of the behavior and the movement naturally rises or falls. Numbering of the vertical axis can vary but it need not be difficult. Taking one numbering system and altering it according to the measurement goals is suggested. Always put the lowest number at the point where the vertical axis meets the horizontal axis.



The movement of a plotted graph may be up or down. If Frank is calling out 25 times a day, the movement from 25 down to 5 is a welcomed movement. Intervals between these numbers may be marked or estimated. For example, 24 may be plotted

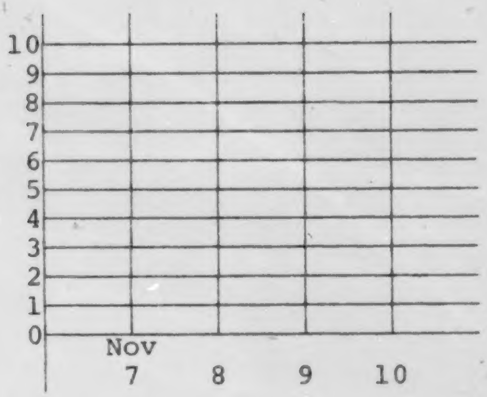


or



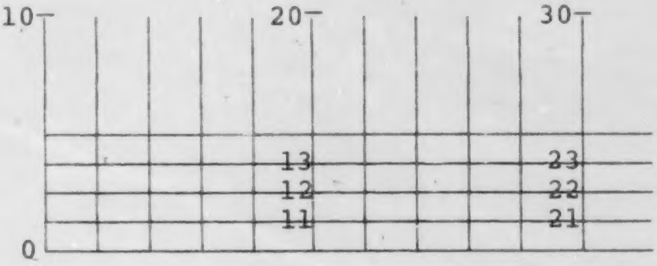
Alteration to the basic system is made by changing the unit numbers from one's, to ten's, or to hundred's.

Units of One: Troy will do ten addition problems in a one-hour period (baseline 2).

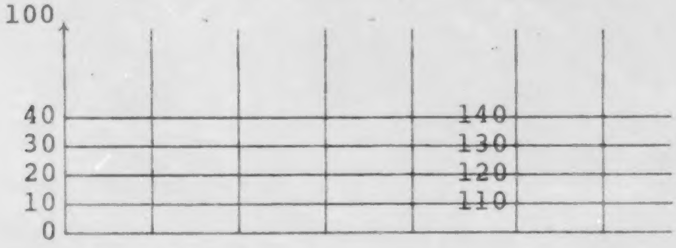


There are several restricting factors about this method. For one, the steps are gross. If a teacher wants to plot a decrease of 36 units, an increase of 36 units, or a slow progress task, it would be difficult to visualize. Secondly, 10 or 100 may be a goal that is surpassed; it would be difficult to graph that achievement by units of one.

Both problems can be eliminated by making each graph as simple as possible and renumbering when limits have been reached. An increase from 0 to 36 might look like this

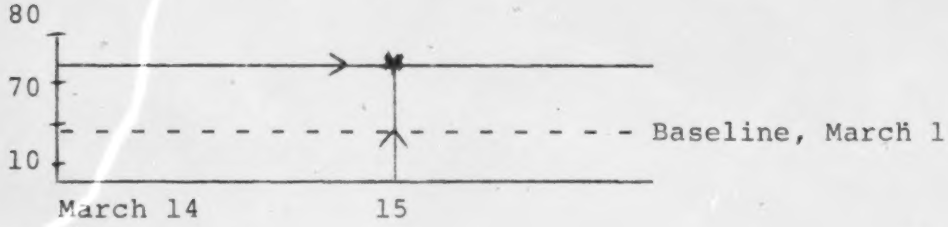


and an achievement over 100 may be graphed like this



One successful peak is reached and another indicated. The graph becomes less confusing for the teacher. It may possibly be more motivating for the student to see success sooner, to complete one level and face a new challenge.

Still one limitation remains for the vertical axis. As with the horizontal axis, the intervals should remain the same. To plot a graph, first the time period is found, then the number or percent of that behavior is found. Where those two points meet is the plotting point for one time interval, e.g., on March 15, June received 75 percent accuracy.



Also, note that baseline data may be marked on the graph to indicate the starting point.

All this trouble and what for? To demonstrate the importance of accountability an extreme sample case is described.

Rich, a third-grade boy, is reading on a first-grade level. When he starts a task he will look around, get up and wander out of the room. The longest recorded time he has spent on a task is three and one-half minutes. In addition, when he is called on he makes a choking cough. His baseline frequency for coughing is 19 times in 15 minutes. Consequently, the quality of his work is affected. He reads at a rate of ten words per minute. As he reads he loses his place and forgets what he has read. His written assignments have not exceeded a 25 percent accuracy level. Diagnostic information reveals that he is not intellectually limited and does not have a recognizable perceptual problem. There is, in fact, no known reason why he cannot read at grade level if he could attend to instruction. Following a prescription, extreme program changes were made. The terminal objective for Rich was to read and comprehend at grade level by the end of the year.

The special education teacher worked all year to meet the terminal objective for Rich. She pushed hard to bring Rich's reading up to grade level. Each day she presented sight words and when he answered correctly she would give him free time. Feeling good about her efforts, she reached the end of the year and needed to write evaluations. Her evaluation read as follows:

> "Rich did a good job this year and made a great deal of improvement. I tried giving him free time whenever he learned his sight words. He seems to enjoy it very much. Most of the time he tried to stay in his seat. Sometimes he did sit for a long time. There were days he did not cough very much. Rick will probably be able to read in the second-grade reader.

What does his fourth grade teacher know? How did the program work? What interventions worked? Which did not work? How much reading progress did he make? Where should instruction begin? How accurate was his work?

These questions could be continued endlessly. How will the teachers words be weighted? Even more importantly, just how much was Rich taught and how much did he learn?

A more effective approach would be to take the terminal objective: "Rick will read and comprehend at grade level (by the end of the year.)" To make that goal reachable requires "enabling objectives." Before he can learn he must attend and those distracting behaviors receive first priority.

1. Rich coughs 19 times in 15 minutes:
   Rich will limit the frequency of his coughing to no more than 5 times per 15 minutes.
2. Rich reads so slowly (10 words per minute) he loses his place and forgets

what he read.
Rich will read at a rate of 90 words per minute.

3. Rich never exceeds 25 percent accuracy in his work.
   Rich will read a presented word list with an 85 percent accuracy.
4. The longest Rich can stick to a task is for 3-1/2 minutes.
   Rich will attend to his reading tasks for a duration of 15 minutes.

Those are four difficult enabling objectives. A more specific evaluation of Rich's progress appears following the explanatory information on frequency, rate, percentage and duration.

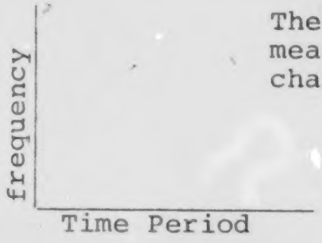
Methods of Measuring Behavior

1. Frequency

Frequency counts noncontinuous behavior; it is the number of times that behavior occurs within a time period (refer to Figure 5.1). The behavior is counted by a simple tally. Tallying does not have to be elaborate. A teacher can make the tally while conducting a class. However, the count should be made within a selected time period designated by minutes, hours, or days. At a convenient time the number should be recorded on an instrument or graph.

How: Decide time; count behavior; record number of times.

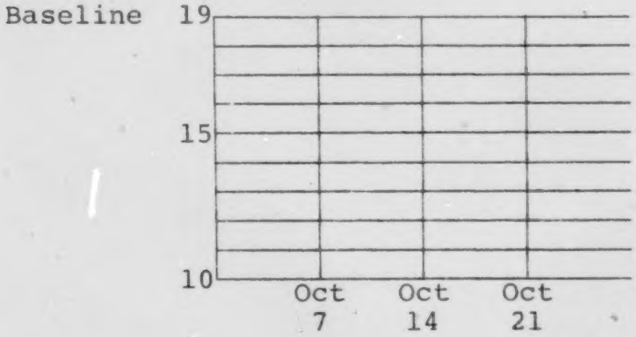
GRAPH:



The vertical axis measures a quantity change.

Rich's teacher chose this method of measuring the frequency of the cough. She wanted to decrease the number from 19 to no more than 5 in a 15-minute period. First, she decided the program strategy and then developed the charting procedure.

Time period: 15 minutes each week
How: Tally coughs
Program: For first minutes of reading, teacher will compliment Rich on good health. The teacher will avoid contact (eye or body) when coughing occurs.



A downward trend on Rich's graph would be desirable. Also, when he reaches the 10 unit, the graph would be renumbered as explained on page 149.

Frequency counts a behavior and records that number within a length of time previously determined. The recording of frequency can be done on a random-time sampling schedule if the behavior occurs with a high frequency. The length of time still remains stable.

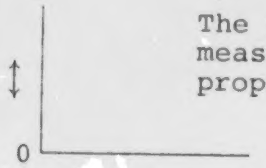
2. Rate

The rate of a behavior is the average number of times a behavior occurs within a time period. Rate must first be tallied as in a frequency count. To simplify the procedure the count should be made within a short time period. Rate measurement has based objectives: the number of words read per minute, the number of times a child attends to a task in a minute, the number of yards run per minute, etc. Objectives are measured in a fixed time period. The elapsed time must be clocked and recorded. Then to find the rate, frequency is divided by the time.

How: Fix a time period; count behaviors; clock time.

$$\frac{\text{number of behaviors}}{\text{elapsed time}} = \text{RATE}$$

GRAPH:



The vertical axis measures a fixed proportion change.

For convenience, the teacher might use an intermediate step before plotting a graph. Rich reads so slowly (10 words per minute) he loses his place and forgets what he reads. His teacher decided to first increase his reading rate and then work on comprehension. Her objective was to increase his rate to 90 words per minute. The program strategy is designed, a chart and a graph made to plot the results.

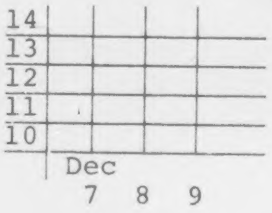
PROGRAM: Present a page with a race car or horse at top. Use stop watch. If speed increases, the picture is given as a reinforcement.

CHART:

DATE		NUMBER OF WORDS		RATE PER MINUTE
Dec. 7	Book B-Pg.1		3 min.	12 words
Dec. 8				

TIME: A daily count is appropriate

GRAPH:



Rich's chart gives the program information and the pertinent data to find the rate. The graph demonstrates visually the increase. Notice that the numbering of the vertical axis begins at the baseline. Rich's teacher decided that a below-baseline score would be marked at the baseline so Rich would not be discouraged.

3. Percentage

A percentage-correct score reflects the percentage of a 100 percent maximum. For an academic task or behavioral observation, it measures the percent of time an appropriate or an inappropriate behavior occurs.

To measure percentage, the frequency of the correct behavior is counted and the total "behavior" is counted. For example, a math problem sheet has 18 problems and a student solved 10 of them accurately (the correct number).

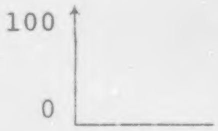
The incorrect number is found by subtraction. The percentage of correct responses is found by dividing the correct behavior (10) by the total behavior (18) and multiplying the result by 100. The percentage of correctly solved problems is 55 percent: $\frac{10}{18} = .55 \times 100 = 55\%$.

Another example: A child is on-task 7 minutes (correct number) out of 10 minutes (total number). He has appropriate behavior 70 percent of his class time. $\frac{7}{10} = .70 \times 100 = 70\%$.

HOW: Select a time; count correct behavior; count total behavior.

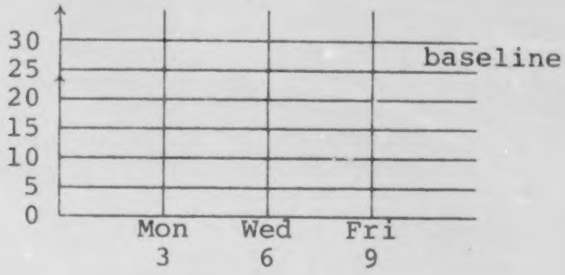
$$\frac{\text{correct behavior}}{\text{total behavior}} = \boxed{.\_\_} \times 100 = \text{percent}$$

GRAPH: The vertical axis measures the "value" of the behavior on a scale of 0 to 100.



Rich has never exceeded 25 percent accuracy in his work. His teacher decided a program strategy to increase the percentage of accuracy in one reading assignment and plotted a graph for that purpose. A check every three days was the selected time period.

PROGRAM:



A percentage measurement records the relative amount of correct behavior.

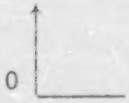
4. Duration

Duration measures the length of time a continuous type of behavior occurs when it occurs infrequently. Similar to a percentage measurement, it is obtained by dividing the tallied target behavior by the total elapsed time and multiplying by 100 to get percent of duration of the continuous behavior. A stop watch is necessary. A time period of observation is selected (15 minutes on Monday and Friday afternoon between 2 and 2:15). When the behavior begins, the stop watch is started. This measurement is particularly valuable for measuring the decrease in duration of thumbsucking, rocking and the perseverance of behaviors.

HOW: Select time frame, clock length of behavior; tally total time.

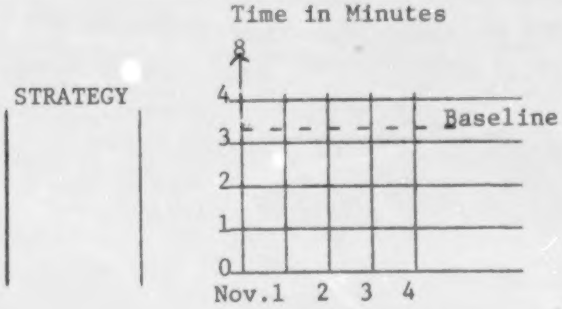
$$\frac{\text{total duration of behavior}}{\text{total time}} = \boxed{.\_\_} \times 100 = \text{duration}$$

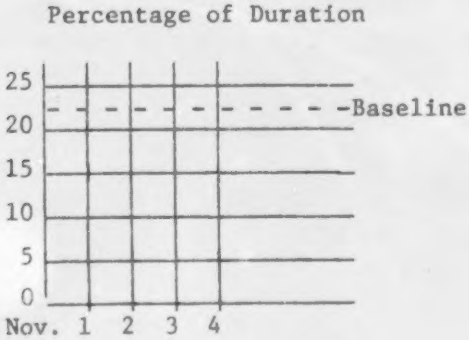
GRAPH: The vertical axis measures length of time (minutes) or percent of time of an infrequent behavior.



Rich's attention to a task is baselined at 3-1/2 minutes. His teacher would like to increase this to 15 minutes. Since attendance to a task happens so infrequently a duration measurement is made primarily for the number of minutes Rich spent at a task.

An observation time and a program strategy were selected. Fifteen minutes was decided upon as the fixed total time of observation. Rich was to be observed daily.





The first day of observation Rich did not sit at his desk. After the teacher had him clock his own time his attention to task time increased. He kept the "time in minutes" graph; the teacher kept the "percent" graph.

With continuous monitoring, Rich's teacher was able to change his program as needed and still maintain consistent measurement. Now the teacher could write an evaluation that contained meaningful information:

> Rich's goal this year was to read on third-grade level. He entered the third grade with a 1.2 grade level score on the S.A.T. On May 30th, Rich was reading at a 2.4 level according to form F of the S.A.T. He completed book "D" of the school's basal series. His coughing behavior--which originally occurred 19 times for every 15 minutes--decreased to zero. He has not had a coughing spell since March 12th. His reading rate increased from 10 words per minute to 100 words per minute. He presently maintains a 60 percent accuracy in reading. He will sit and work on written tasks up to 11 minutes for any one task. The programs and strategies used . . .

5. Program Monitoring

Program monitoring as discussed in the previous section is a step toward more accurate measurement. When monitoring a system, accuracy and frequency become inherent measures.

Another method of monitoring is also included. Each child's name is recorded on the form along with his program objectives; other children are included on the same form. Each school calendar day is entered. After a session with the children, the teacher records a code for each child. The code includes the type of intervention and the child's achievement, which could be completion or accuracy. Figure 5.2 is a form which may be used in graphing program monitored data. Example codes follow the form, and a sample of a completed form is also included.

NAME	DATES											
	INTERVENTION											
	DATES											
	INTERVENTION											
NAME	DATES											
	INTERVENTION											
	DATES											
	INTERVENTION											
NAME	DATES											
	INTERVENTION											
	DATES											
	INTERVENTION											
NAME	DATES											
	INTERVENTION											
	DATES											
	INTERVENTION											
NAME	DATES											
	INTERVENTION											
	DATES											
	INTERVENTION											

Fig. 5.2a

Program Monitoring Chart

Intervention Code (recorded above slash)

T	Task sequence. Given a well-sequenced task this is a quick reference. John may be on T_1 and Jill on T_2. The number of days to complete a sequence is recorded
D	Diagnosis
I	Interview
B	Begin instruction - on introduction
✓	Progress check
Tu	Tutor or aide taught on a one-to-one basis
RT	Reteach lesson
X	Dropped task
☆	Completed task sequence

Child's Code (recorded below slash)

*	Task completed
1/2	Fraction of task completed
%	Percentage of accuracy
R	Refusal to do the task
F	Frustration--behaviorally the child started--restarted--complained--ripped paper, etc.
A	Absent
OT	On described task

Fig. 5.2b

Monitoring Chart Codes

Tom Will read 3 pages per day	DATES	10-1	10-2	10-3	10-4	10-5	10-8	10-9	10-10	10-11	10-12
	INTERVENTION	D CT	D OT	B ☆	T_1 1/2	T_1 1/2	✓ 85%	T_2 ☆	T_3 1/3	T_3 R	T_3 RT OT

This would be interpreted as follows: On the first two days (October 1 and October 2) Tom was given a diganostic battery and did his described task. On the third day (October 3) an instruction series was started and Tom completed the task. Next the task analyzed sequence began. Tom completed 1/2 of the test in the next two days. Then on the 8th he was given a progress check and obtained an 85% accuracy. On October 10, Tom completed 1/3 of the performance objective, on the 11th, he refused to read at all and on the 12th he was back on task.

Fig. 5.2c

An example of a coded monitoring chart

The tools of evaluation and skills of behavior measurement offer data for accountability. Programming must be monitored and evaluated often enough to insure that progress is indeed being made. If an adequate program is written with built-in checks, daily lesson plans are more likely to fall into place, and final evaluation is simplified as data are available to be summarized.

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APPENDIX A

Systematic Observation of Behavior: Glossary of Items

1. Information
2. Questions
3. Instructional device
4. Control
5. Affective
6. Participation
7. Response
8. Self-involved
9. Other-involved
10. Miscellaneous

APPENDIX A: Systematic Observation of Behavior: Glossary of Items

1. Information: Presentation of information content for use or consideration by another person.

   AMP: Amplification: A continuation or expansion of a previous response given by another. Example: (a) "Automobiles are the main form of transportation in the Midwest." (b) "Yes, and they are probably the major form in the entire country."

   GA: Gives Answer: Information produced as response to previously asked question. Example: (a) "What time is it?" (b) "Three o'clock."

   I: Information: Presentation of verbal stimulus of data content for use or processing by another person. Example: (a) "Gasoline prices are rising steadily."

   NC: Not Correct: Evaluation of a given response as inappropriate or unacceptable. Example: (a) "That word is 'cat'." (b) "That's not right."

   O: Orientation: Placement of a current task or situation into context by reference to past or future activities. Example: (a) "Yesterday we discovered that there are 'remainders" in subtraction, so today we will use that remainder."

   S: Symbolic Information: Nonverbal graphic-pictorial or auditory stimulus available for processing. Example: Geometric forms on a workbook page; gross auditory units in sound-vocalization exercises; music.

---

2. Questions: Attempt to solicit information from another source.

   DYK: Do You Know?: Approach to release subject from further questioning about a given topic, when expected answer is apparently unknown. Example: (a) (after extensive prompting in pursuit of a specific answer) "Well, do you know what it is, or not?"

GA?: Giving Answer (in question form): Information produced as response to previously stated question. Example: (a) "This is a pen, isn't it?"

Q: Question: Verbalized statement in interrogative form. Example: (a) "You will finish before lunch?"

QA: Question about Activity: Question containing basic elements or indications of desire to be engaged in specific task. Example: (a) "Can I do this?", or "Can we go to recess?"

QC: Question/Cognition: A question requiring immediate recognition or general comprehensive awareness. Example: (a) "What color is this book?"

QCD: Question/Can Do: Question requiring evaluation of ability to perform in relation to given task requirement. Example: (a) "Can you do this problem?" or "Do you understand how to do this now?"

QCL: Question with Clues: Question that includes supportive prompting as to terminal or expected response. Example: (a) "Can you think of an animal whose name starts with an 's' that crawls on the ground?"

QD: Question/Divergence: Question allowing respondent to select response among possible alternative outcomes or responses. Example: "What is a good way to make a new friend?"

QN: Question/Convergence: Question statement requiring respondent to develop best single response based upon logical organization of selected information. Example: "If the bottle is ½ empty, how much water is left in it?"

QE: Question/Evaluation: Question statement requiring judgment of information according to acceptable standard. Example: "Which of these words is just like the first word?"

QM: Question/Memory: Question statement requiring respondent to retrieve information in exact form in which it was previously given. Example: "Who knows the capital of Arkansas?"

QO: Question/Orientation: Question seeking information about possible activities based upon a time sequence. Example: "When I finish my math, do I do my reading next?"

QP: Question/Punishment: Question statement requiring respondent to determine nature and circumstances of supposed punishment. Example: "What do you think you ought to do to make up for that?"

QR: Question/Rephrase: Rephrase of previous question without additional clues or information. Example: (having asked previously, "How many apples were put in the basket?"), "Well, how many apples do you see in the basket?"

QRV: Question/Review: Question in reference to previous information given, or activities performed. Example: "Remember when we were talking about Henry VIII yesterday? Who, did we say, was his third wife?"

Q✓: Question Check: Question statement attempting to determine process or procedure by which the respondent attained terminal answer to given task requirement. Example: "Tell me how you did this problem."

---

3. Instructional Device: Behavior which facilitates instructional exchange.

AK: Acknowledge: Response to apparent or observable behavior which represents attempt by subject to express. Example: (sees Mary with her hand raised), "Yes, Mary?"

AR: Acceptance with Reinforcement: Affective acknowledgement of respondent based upon given correct response. Example: "Yes, 'cat'! That's real good, Bill!"

CA: Call for Attention: Verbal or nonverbal request of others for focused awareness of oneself. Example: "All right, everyone listen to me now," or (snapping fingers, slamming book on desk.)

CAU: Caution: Statement indicating possible hazards or limitations anticipated in performance of given task or pending situation. Example: "Is this OK with you?" or "Do you believe this?" or "Is this true?".

WHY: Why: Explanation of needs or reasons for a subject being important, without reference to feeling or attitude. Example: "We should study math so it will help us to get certain jobs."

CL: Clues: Items of information presented with the intent of guiding the respondent toward solutions, Example: "What is this word?--It starts with a /k/ sound."

DKP: Don't know with Probability: Statements of probability with stated indications of uncertainty. Example: "I don't know, but it could be this way.."

DR: Direction to Repeat: Verbal direction to repeat a previously elicited response. Example: "Please tell us again what you said."

HT: How To: Demonstration or verbal statement indicating a structured approach or organized sequence to performance of a proposed task. Example: "First we subtract here, then carry this number, and finally..."

LAG: Look Again: Statement requiring respondent to review or perform further on a given task. Example: "Take another look and see if you did it correctly."

WHT: What To: Verbal statements of instruction indicating an area of attention for participating. Example: "Take out your math book and open it to page 46."

LD: Leading: Leading a verbal recitation to facilitate collective student response. Example: (leads Pledge of Allegiance, Distar group, etc.).

OA: Offering Alternatives: Verbal statements of instruction indicating options for performance or response. Example: "You may either do every problem on this page, or you may do every other problem."

QRD: Question/Ready: Verbal question soliciting the state of preparedness. Example: "Are you ready? or "Can we go to work now?"

QRH: Question/Rhetorical: Question answered by person posing question, without intent for response by another. Example: "What do we do when we need help? We ask questions, don't we?"

QWHT: Question/What To: Question statement soliciting knowledge of area of attention for participation. Example: "Do you know what to do now?"

GT: Get to It: Verbal or nonverbal signal indicating time to perform. Example: "OK, now, go to work."

REP: Repetition: Verbatim repetition of previous response. Example: (repeats any former response).

RV: Review: Review of previous information to facilitate new input of information. Example: "Yesterday we read about G.W., so..."

SAL: Salutation: Verbal or nonverbal method of initiating an interaction. Example: (waves hand), or "Good morning, how are you?"

T✓: Teacher-check: Teacher checks student's progress on a task. Example: "How are you doing, Johnny?"

WDO: Who does/Optional: Verbal solicitation of optional performance or proposed task or activity. Example: Who wants to pass out papers?"

RT: Release from Task: Verbal discharge from obligation or responsibility. Example: "OK, you can go now."

---

4. Control: Direction and/or redirection of behavior.

A: Accepting: Confirming the correctness of or agreement with the responses of another. Example: That's good. You did it correctly."

AA: Assumes Authority: Reference to oneself as standard for the validity of tasks assigned, or rules established. Example: "Because I'm the teacher, that's why!"

AK: Acknowledge: Recognition or observation of overt response or behavior, (hand up). Example: "Yes, John, what is it?"

DB: Describes Behavior: Statement of sequenced repetitions of previously observed statements or tasks performed. Example: "You went home without going to the office first."

DC+-: Detailing Consequences: (negative/positive): Verbal description of resultant outcomes of anticipated or performed behaviors. Example: "If you do this, you can have extra recess time," or "If you don't finish your work, you'll stay after school."

GRP: Group: Verbal instructions intended for group performance. Example: "Everyone line up for lunch," or "A lady says thank you."

NRM: Normative: Descriptions of established standards for group performance and/or personal identification. Example: "In this class we don't do that" or "A lady says thank you."

PC: Physical Control: Application of physical restraints to manage behavior. Example: (puts child in his seat, physical guidance in a learning situation).

PRX: Proximity: Within immediate vicinity of student or teacher. Example: (standing next to student).

PUN: Punishment: Immediate application of penalty condition for inappropriate behavior or performance. Example: (accosts student) or "Go stand outside in the hall!"

PW: Physical Withdrawal: Temporary self-removal from situations or setting. Example: (student leaves room or turns back).

REM: Reminder: Verbal repetition of a previous request. Example: "Johnny, you forgot to bring your paper up."

RF: Tangible Reinforcement: A concrete object presented as intended reinforcement for preferred behavior. Example: (presents student with an M&M for a correct response).

RT: Release from Task: Verbal discharge from obligation or responsibility. Example: "OK, you can go now."

SH: Shhhhh-hhh: Gestural device for the purpose of establishing or maintaining acceptable audibility. Example: (hushes class for excessive chatter).

SN: Says Name: Statement of the name of another. Example: "Johnny."

STP: Stop: Signal or command to cease an ongoing activity. Example: "Let's knock it off!"

BOT: Back on Task: Statements indicating subject to resume or return to designated activity. Example: "Let's get back to work."

WY: Will You: Verbal request for a personal favor in which the subject's performance is optional. Example: "Will you open the window for me?"

NVS: Nonverbal Signal: Nonverbal indicators used to regulate or control activity. Example: (snaps fingers to cease talking).

---

5. Affective: Statements and/or behavior that indicates emotions and feeling, positive or negative.

DIS: Disagreement: Statement of lack of willingness to accept given viewpoints or task, in a resisting position. Example: "I don't believe what you say." or "I can't buy that."

CO: Concern for Other: Solicitous of the physical, emotional, or mental state or condition of another. Example: "Are you hurt?" or "What's the matter?"

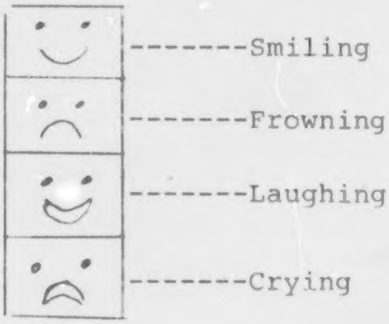
ENC: Encouragement: Statement intended to be supportive of or indicative of confidence in another's ability to perform. Example: "I'm sure you can do it."

PF: Personal Feeling: Statement indicating affective attitudes or emotional bias toward events, persons, or situations. Example: "I am upset" or "I am happy today about your work."

INT: Interpretation: Presentation of logical causes and/or effects of given response or situation. Example: "You did that because you were angry."

KD: Kidding: Statements intended to humor another. Example: "Let's laugh and feel better together."

FG: Facial Gestures: Observable reactions as determined by variation in expression. Example: (see coded examples)



WC: Who Cares?: Denial of concern for consequences of behavior related to assigned task or activity. Example: "It doesn't bother me any."

---

6. Participation: Apparent peripheral activity of student relevant to task activity other than active involvement.

HLP: Help: Request for assistance in the performance of a given task. Example: "I don't understand this; will you help me?"

HU: Hand Up: One's hand observably raised.

L/: Looking at----: Observed direction of attention. (includes target or object observed).

ND: Need: Statement indicating incapacity or lack of readiness to perform an anticipated task. Example: "I need a pencil first."

PNT: Pantomime: Nonverbal mimicry or physical imitation of motor acts or patterns. Example: (prancing about; imitating teacher.)

SQ: Sitting Quietly: Seated silently, task attention is optional. Example: (in seat, inactive).

PRP: Preparation: Preliminary activities for the purpose of readiness for an assigned task. Example: (preparing papers, pencils, etc., ready for work.)

ARG: Argumentation: Resistive of another's position or direction. Example: "I don't see why we have to do this."

CMP: Complaining: Statement indicating discomfort or dissatisfaction with assigned task or situation. Example: "This is too hard" or "This is dumb."

DEP: Dependency: Observed various behaviors suggesting comfort-need by physical contact with another person. Example: (physical-proximity need, holding teacher's hand, etc.).

NR: Not Ready: Statement indicating lack of preparedness or readiness to perform. Example: "I'm not ready; wait a minute."

SO: Speaking Out: Unauthorized verbal expression at inappropriate time. Example: (without raising hand), "Hey! I don't get this!"

VR: Verbal Refusal: Statement of lack of willingness to perform. Example: "I won't do this!"

SE: Self-Excusing: Offering reasons for lack of performance. Example: "I'm too tired to do this today."

WM: Who Me?: Question statement requesting reclarification or identification. Example: "Did you mean me?"

R..: Rubbing Eyes: Given

..: Squinting: Given

PW: Physical Withdrawal: Temporary self-removal from situation or setting. Example: (student leaves room or turns back to another).

---

7. Response: Observed overt behavior directly relevant to task performance.

ANS+-: Answer: (correct or incorrect): Response designation for replies to academic or information questions as to their acceptability. Example: "What is 2 + 2?" "4 or 6?"

CNT: Counting Aloud: Oral dictation of numbers in rote sequence. Example: "1..2..3..4..5..."

DK: Don't Know: Statement indicating lack of knowledge. Example: "I don't know."

DNI: Denial: Refusal to assume responsibility for improper performance. Example: "I didn't do it."

DUN: Done: Statement indicating task completion or termination of activity. Example: "I'm through" or "Finished."

MT: Me Too: Request to be included or to participate. Example: "I want to go along, too."

PRT: Partial Response: Stated incomplete, but correct, response or answer. Example: "The American Flag is red and white."

RDG: Reading: Observed oral or silent reading.

CC: Call for Confirmation: Verbal request for evaluation as to correctness of response or validity of a task assignment. Example: "Is this right?" or "Is this OK?"

✓ : Check: Student request for confirmation of adequacy of performance. Example: "How am I doing on this?"

VM: Visual-Motor: Behavior directed to or in compliance with teacher directives for writing, painting, cutting or other eye-hand tasks. Example: (coloring).

---

8. Self-Involved: Activity child performs by or to himself.

BS: Blaming Self: Assuming responsibility for improper performance. Example: "I guess its all my fault."

DD: Daydreaming: Unfocused staring at undetermined object.

PM: Perseverative Movement: Repetitive physical motion. Example: (tapping pencil, kicking chair, rocking in a desk, etc.).

RL: Rolling Body: Physical motion in specific area; purposeless or undirected general physical activity.

SV: Subvocalizing: Minimally audible verbalization not intended for communication to another.

ZZ: Sleeping: Given

CRL: Crawling: Given

PL: Playing: Given

---

9. Other-involved: Activity child performs with or to another.

BO: Blaming Other: Directing responsibility or guilt to another person. Example: "It was his fault."

DSPO: Disparaging with Others: Attempting to enlist the alliance of others in personal degradation of another. Example: "Go tell Johnny he stinks" or "Mary is stupid, isn't she?"

EXCL: Excluding: Statement denying opportunity for participation of another. Example: "You can't come with us" or "We don't want you in our group."

OS: Out of Seat: Person is not seated.

P+-: Physical Contact (positive or negative): Brief physical contact with another, other than for purposes of control.

PL/: Playing with ----: (includes object of attention)

POB: Propelling Object: Throwing or casting object.

ST: Standing by Teacher: Standing in physical proximity of teacher.

POS: Possession: Statement indicating committed rights over property, or verbal exclamation of rightful ownership with intent of not sharing. Example: "This is mine."

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10. Miscellaneous: Additional items descriptive of information important for coding.

BB: Blackboard

BK: Book

CHB: Chair Behavior: Observable activity which occurs while present in seat other than verbal. Example: (leaning back in chair).

DSK: Desk

ERA: Eraser

FLR: Floor

HD: Head: Any observed motion or response executed by movement of the head. Example: (rotating head in circular fashion).

IS: In Seat

MU: Music

N: Noise

OB: Object

OC: Other Child

PPR: Paper

T: Teacher

WND: Window

TY: Thank You

V: Verbalization: Any verbal expression the content of which remains unknown.

+-: Notation used for the purpose of indicating intent or control, positively or negatively.

APPENDIX B

Categorical Descriptions of Handicaps

The philosophy of this training manual is based upon individualized education for exceptional children in as normal an environment as possible. Yet many requests were made for inclusion of general descriptions of categorical areas for training use to increase awareness of generalists who have in-depth knowledge in one categorical area and limited awareness in other areas. In an effort to meet this need the following articles are included.

Appendix B

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Note: Kirk's Profiles of children with various handicapping conditions provides an excellent source. See Educating Exceptional Children by Samuel Kirk, 2nd ed., New York: Houghton Mifflin, 1972

BEHAVIOR DISORDERS

by Anthony LaPray, Ed.D.

1. Legal Definition

Children with behavior disorders are children of potentially normal intelligence without known organicity who, because of learned behavior, are not achieving academically or personally.

2. Practical Definition

Children's behavior disorders can be temporary, lasting only a few seconds or fairly permanent, lasting most of the person's life, depending on the individual. These disorders are caused by either a single factor or an interaction of factors that affect the functioning of the individual and reduce his ability to function in society. This decrease in ability to function can occur in intellectual capabilities, emotional well being, social or interpersonal relationships. These disorders can occur in one or a combination of the following elements of a child's life.

(1) Genetic: the child's hereditary base is in someway deficient, causing a decrease in functioning.
(2) Bio-chemical: the child has an abnormal biochemical or endocrine disorder that affects the way he interacts with his environment.
(3) Neurological: the child's central nervous system is either damaged or malfunctions, causing problems as he interacts with his environment.
(4) Environmental: the interaction of the child with his surroundings, his home, school, community can cause emotional intellectual, or personal problems. The method in which the child as a genetic, biochemical, neurological organism learns to interact with his environment on any one given occasion determines how he will interact with it in the future.

Behavior disorders transcend all areas of exceptionality: because of the very fact that a child is handicapped, he has more emotional problems than the nonhandicapped child. Children with other types of handicaps need more emotional support throughout their lives.

The social institution that has the most contact with the child over the age of six is the schools. For this reason it is felt that the schools must develop a therapeutic milieu to assist all children in dealing with their emotions and behavior.

The behavior disordered child is a child who has failed. He has failed in his interactions with others and he is generally a child who has had a great number of failing experiences in school. It is important in working with these children that the pattern of failure be broken and that the child be allowed to succeed. This can be done both in his academic as well as his personal life. Success is the key to the alleviation of behavior disorders, and educational therapy is the key to this success.

3. Descriptors

Behavior disordered children are described as emotionally disturbed, socially maladjusted, juvenile delinquent, autistic, psychopathic, crazy or just problem children. They are children who, because of some problem or problems, cannot reach their potential without help.

4. Identification

The child with behavior disorders is identified by his behavior through comparisons of this behavior with that of the majority of children of the age group. He can be further identified by the use of group and individual tests, questionnaires, checklists, and interviews.

5. Characteristics

Children with behavior disorders do not generally have a different appearance than normal children; they are really normal children who, for a time, act in an abnormal way. Skilled special educators, psychologists, or medical personnel can assist in the diagnosis and remediation of these problems. These children have normal potential and with the remediation of their problems will join the mainstream of the community.

The following are a list of questions which may aid in the identification of children with behavior disorders.

(1) Aggressive behavior: does he lie consistently, even when the truth would do just as well?

Does he cheat even when he doesn't need to, merely for the sake of cheating?

Does he steal, or report things of his own to be stolen when they are not?

Is he intentionally destructive? Is he cruel? Does he consistently bully younger children?

In his relations with adults, is he arrogant and defiant? Does he frequently have temper tantrums?

(2) Withdrawn

Is he overly sensitive, so that he cries frequently? Does he daydream a great deal and seem to prefer his daydreams to activities with other children?

Does he try extremely hard to please, even at the expense of losing friends?

Is he easily frightened and does he have unusual fears?

Is he overly selfish? Does he make up stories to enhance his own position?

(3) Physical factors

Does the child bite his nails? Does the child have any face twitching?

Does the child constantly pull or twist his hair, chew on his clothing, or pick or scratch his body?

Does he have a weak, high pitched, or strained voice or is he constantly clearing his throat?

Is he conscious of excessive overweight or underweight? Is he conscious of extreme tallness or shortness?

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EMOTIONALLY DISTURBED

by Joyce Barnes, M.S.

1. Legal Definition

(1) Emotionally handicapped children have normal or above normal learning potential. Their emotional condition is such that they cannot learn at the level of expectation for their age or adjust adequately to their peer group in regular public school classes. They are children whose behavior manifests a persistent failure to adjust and function intellectually, emotionally, and socially (Utah Guidelines).

(2) Stephens defines two handicaps:

A. Behaviorally handicapped children: those whose responses interfere with adjustment to school. Includes children whose rate of behavior interferes with learning, and those whose weak control of behavior interferes with learning.

B. Learning handicapped children: pupils who have either serious academic learning deficiencies or serious social learning problems or both. These problems are evidenced by maladjustment in school.

(3) Bower and Lambert (in _Conflict in the Classroom_, edited by Long, _et al._) define an emotionally handicapped child as _having_ moderate to marked reduction in behavioral freedom, which in turn reduces his ability to function effectively in learning or working with others. In the classroom, this loss of freedom affects the child's educative and social experiences and results in a noticeable susceptibility to one or more of these five patterns of behavior:

A. An inability to learn which cannot be adequately explained by intellectual, sensory, neurophysiological, or general health factors.

B. An inability to build or maintain satisfactory interpersonal relationships with peers and teachers.

C. Inappropriate or immature types of behavior or feelings under normal conditions.

D. A general pervasive mood of unhappiness or depression.

E. A tendency to develop physical symptoms, such as speech problems, pains, or fears, associated with personal or school problems.

(4) An outline from the Wichita Public Schools indicates placement of students in classes for emotionally handicapped when they are unable to benefit from regular classroom instruction even when supportive assistance was provided. They described these students as having a combination of characteristics such as excessive daydreaming, inappropriate emotional responses, intensive fears, excessive withdrawal, irresponsible social behavior, and perceptual disabilities.

(5) Bower has suggested that the term emotionally handicapped should be substituted for emotionally disturbed when schools refer to these children. Disturbance implies behavior that upsets others. Many of these children are extremely withdrawn and non disturbant. A tense situation may evoke appropriate disturbance in anyone, but these children respond inappropriately to many normal situations. The phrase emotionally handicapped emphasizes that a "disabling condition of some duration" has diminished the student's ability to function in school. (Bower in Utah Guidelines)

2. Practical Definition

(1) Layman Information

Some samples from a checklist by Quay as found in Conflict in the Classroom (Long, et al) include:

Doesn't know how to have fun; behaves like a little adult;
Steals in company with others;
Fighting;
Anxiety, chronic general fearfulness;
Depression, chronic sadness;
Negativism, tendency to do the opposite of what is requested;
Often has physical complaints; e.g., headaches, stomach aches.

(2) Etiology and Relation, if any to other exceptionalities:

Since the inception of special education classes in the public schools, additional groupings seem to appear. Most of these labels are derived from etiological terms and have little or no meaning for educators in terms of classroom procedures for programming and remediation. This is not to negate etiological considerations, but to emphasize that a practitioner (teacher-educator) will work with the behavior and learning of a child, regardless of the medical findings, and will necessarily be oriented to behavioral and learning terminology.

Examples of such etiological terms include neurologically handicapped, children with minimal brain dysfunction, children with perceptual-motor handicaps, and the learning-disordered child.

3. Descriptors

(1) Descriptors may come from a variety of sources: teachers, peers, self-perception, ancillary personnel, and families. Rating scales can be used, then combined to give a total evaluation.

(2) A listing of needs (or competencies) is a way of listing frequencies of occurrence of specific problems, indicating a deficit in competencies. Such a summary would contain terms like:

Listening comprehension
Following directions
Restlessness
Immaturity
Reading comprehension
Written expression
Language impaired
Socially handicapped
Hearing impaired
Visually impaired
Work habits
Attention span

(3) Criteria for consideration of candidates for Special Education Class for Emotionally Handicapped in Utah: (Utah Guidelines)

A. Initial consideration should be based on certain symptomatic characteristics evident in children who suffer from emotional disturbance. Teachers can readily identify possible candidates by keeping in mind that emotionally handicapped children will display any or all of the following symptoms:

a. Inability to learn at a rate commensurate with their intellectual, sensory-motor and physical development.

b. Inability to establish and maintain adequate social relationships.

c. Inability to respond appropriately in day-to-day situations.

d. Excessive behavior, ranging from hyperactive, impulsive responses to depression and withdrawal.

A. For purposes of educational planning and programming, certain types of handicaps displayed by children need to be handled in other educational programs. Children with the following characteristics should, therefore, be excluded as candidates for the Emotionally Handicapped Program:

a. Those whose emotional disturbances are caused by reaction to immediate situations rather than prolonged disturbances.

b. Those who have primary physical handicaps of blindness or deafness and/or manifest conditions directly associated with organic brain impairment.

c. Those with below-average learning potential.

d. Those whose disturbance is so severe that they require intensive psychiatric services with a recommendation for a treatment center.

e. Those whose learning disabilities should be helped through tutorial or remedial services.

4. Personal Criteria and/or Informal Methods for Identifying this Disabled child

Looking at test batteries;
Personal observations and interviews with: regular school staff, ancillary personnel, the child, the child's family, other "significant others" in his life;
Looking at data from latest physical examination, including recent vision and hearing tests;
Looking at work samples obtained during any school attendance.

5. Characteristics

(1) Behavioral and Functional

A. Basic prerequisites for formal schooling are often found to be defective in the repertoires of learning handicapped children. These may include: failure to read consistently from left to right, exceedingly short attention span, poor recall of previously learned material, erratic academic performance, knowledge of a process one day and failure to use the same skill subsequently, failure to obey simple directions, aberrant behavior, overreactions to stimuli, difficulty in counting objects, poor discrimination of likenesses and differences among objects and sounds. Unwillingness to attempt tasks, failure to participate appropriately in group activities (Stephens).

B. In addition to the poor qualitative aspects of achievement, resistence to conventional instruction is often observed (Stephens).

C. Two main areas of problems in adjustment in school are: (a) children whose rate of behavior interferes with learning, and (b) those whose weak control of behavior interferes with learning. Characteristics of such children are: restlessness, attention-seeking, disruptiveness, boisterousness, hyperactivity, disobedience, over aggressiveness, and unruliness; or on the other end of the spectrum: quiet, shy, withdrawn, phobic, and autistic. Observable characteristics of children with poor control of behavior include: bizarre thinking as reflected in peculiar behavior, problems of attending behavior, impaired social behavior, and unwarranted emotional responses (Stephens).

D. Characteristics of a psychological nature would include:

  a. Motor performance
  b. Visual discrimination
  c. Auditory discrimination
  d. Memory

(2) Academic

A. Underachievement

B. Poor quality of achievement

C. Resistence to conventional instruction

D. Receptive-expressive modes

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EDUCABLE MENTALLY RETARDED

by Philip Chinn, Ed.D.

1. Legal Definitions

Educable mental retardation has often been simply defined as a low intelligence quotient. For instance, to qualify for special education services, the State of Utah requires an I.Q. of 55 to 75 and an achievement profile commensurate with the low I.Q.

One of the most widely accepted definitions of mental retardation which provides a clearer interpretation of the problem is that of the American Association on Mental Deficiency (AAMD). This definition states that "mental retardation refers to sub-average general intellectual functioning originating during the developmental period and associated with impairment in adaptive behavior" (Heber, 1961).

The AAMD definition has several important implications for professional workers who deal with the mentally retarded and their familiies. First, AAMD defines "subaverage" as those individuals falling below one standard deviation of the mean. Since the mean I.Q. is generally recognized as 100, those falling below one standard deviation on the two most widely used individual tests of intelligence would include those with scores below 84 on the Weschsler scales, and below 83 on the Stanford-Binet scale. While a cut-off score of 70 represents a prevalence of about two to three percent, the higher cut-off score of the AAMD definition includes nearly 16 percent of the total population. This definition provides for recognition of the need for special eduational services of the large and often neglected group of children whose I.Q. scores fall within the 70 to 84 range. These children generally lack the ability to compete academically with their intellectually average or above-average peers. Yet their I.Q. score often precludes special educational services which are needed for these borderline retarded children.

The second implication of the definition of mental retardation provided by the AAMD is related to the fact that the three criteria used in the definition do not refer to etiology of the retardation. The child must 1) demonstrate subaverage intellect and function, 2) **this type of** function must originate during the period of childhood development, or from conception to age 16, and 3) must be associated with impairment in adaptive behavior. In the past, when retardation was identified in terms of organic etiology, children with uncertain etiology, such as mental or sensory deprivation, were simply referred to as "pseudo-retardates." Likewise, disturbed individuals with emotional overlays which caused lower functioning levels were also treated as "pseudo-retardates." In the AAMD definition, the individual is considered retarded if he meets the stated criteria. If through environmental or sensory enrichment, or psychotherapy, his level of functioning rises above the criteria for retardation, the child is no longer considered retarded.

With the AAMD definition, children are classified according to symptom severity. Classification is made according to the standard deviations from the mean I.Q. of 100.

Standard Deviation	Classification	Corresponding I.Q.*
-1.01 to -2.00	Borderline	70-84
-2.01 to -3.00	Mild	55-69
-3.01 to -4.00	Moderate	40-54
-4.01 to -5.00	Severe	25-39
below -5.00	Profound	under 25

* Wechsler scale with S.D. of 15.

Accordingly, educable mentally retarded children would fall in the mildly retarded range with a few children overlapping into the lower levels of the borderline range.

2. Other Definitions

Mentally retarded children are usually classified by symptom etiology, symptom severity, or by cliical types. Clinicians in the health sciences are often interested in all three systems of classification. Clinicians in the behavioral sciences and education, while interested in all three systems, tend to place a greater emphasis on symptom severity, as their primary service is to provide programs meeting the individual needs of each child regardless of etiology or clinical type.

Symptom etiology. Classification based on symptom etiology is provided by the AAMD manual on terminology and classification.

Briefly summarized, the eight categories are:

(1) Mental retardation associated with diseases and conditions due to infection (e.g., congenital rubella, post-natal encephalitis, syphilis).

(2) Mental retardation associated with diseases and conditions due to toxicity (e.g., Ph incompatability causing bilirubin encephalopathy, congenital maternal toxicity).

(3) Mental retardation associated with diseases and conditions due to trauma or physical agents (e.g., prenatal, perinatal or postnatal physical injuries, anoxia at birth).

(4) Mental retardation associated with diseases and conditions due to disorders to metabolism, growth, or nutrition (e.g., phenylketonuria).

(5) Mental retardation associated with diseases and conditions due to new growths (e.g., neurofibromatosis).

(6) Mental retardation associated with diseases and conditions due to unknown prenatal influence (e.g., hydrocephalus, Down's Syndrome).

(7) Mental retardation associated with diseases and conditions due to unknown and uncertain causes with central nervous system deviation present (e.g., spinal sclerosis).

(8) Mental retardation due to uncertain or presumed psychological cause with functional or behavioral reactions alone expressed (e.g., cultural-familial retardation).

As many as 75 to 85 percent of all retarded children may be identified as having an etiology of uncertain cause with functional or behavioral deviations alone expressed. The remaining percentage of children would be distributed by etiology in categories 1 through 7.

3. Characteristics

(1) Functional Capacities

The educable mentally retarded children who enter school for the first time, bring with them more of the appearance of their normal peers than distinguishing characteristics which set them aside from other children. They have the same basic likes, dislikes, and needs of all children.

Unfortunately, when they enter school, academic pressures are levied on them and their intellectual differences become magnified. Often their academic problems are compounded by social development commensurate with their mental age, but not with their chronological age. Thus, they often find rejection on two fronts, from the teacher frustrated with their academic limitations and from their normal peers frustrated by their social inadequacies. Failing in their efforts and rejected, the emotional problems begin.

There appears to be little disagreement with the notion that there is a higher incidence of behavioral disturbances among the retarded population as compared to the general population. Studies have indicated that as many as forty percent of the retarded population may have emotional or personality deviations as compared to about one-half that percentage for the non-retarded population (Dewan, 1948; Weaver, 1946; Craft, 1959).

(2) Behavioral - Mental Age Discrepancies

As previously stated, educable retarded children may closely resemble their normal peers physically and at times behaviorally. As the child grows older, however, the discrepancy between mental age and chronological age becomes more acute. The six-year old retarded child with an I.Q. of 75 will have an approximate mental age of four and one-half years, or only one and one-half years behind his normal peers. When he reaches the age of 16, however, the mental age discrepancy may be as great as four years. If the I.Q. is lower than 75, the discrepancy will be proportionately larger.

(3) Physical Deviations

While the majority of the retarded population have few observable deficiencies in their physical characteristics, there appears to be a direct correlation to the degree of retardation and the degree of physical defect. Researchers have found that retarded children compared to normal children are generally deficient in physical characteristics of height and weight (Abernathy, 1936; Flory, 1936; Paterson, 1930). Flory's study indicates that not only in the growth level deficient, but the period of growth is also extended.

Researchers have also found a greater preponderance of sensory defects such as auditory and visual acuity among the retarded (Mathew, 1951; Kempf & Collins, 1929). Likewise, the retarded are deficient compared to their normal counterparts with respect to motor proficiency. Francis and Rarrick (1960) suggest that mental retardation need not cause motor retardation. Rather, motor deficiencies among the retarded may be more of a function of deprivation in learning and practice opportunities than the retardation itself.

(4) Learning

The literature regarding the learning characteristics of the retarded has increased considerably in the past decade. A detailed discussion of all the basic learning characteristics of the retarded would be too extensive for the limitations of this section. However, a few of the primary distinguishing characteristics follow:

A. Distribution of Practice

While many individuals appear to function well by utilizing mass practice, such as cramming for examinations, the literature suggests that distributed practice enhances the learning performance of retarded individuals in contrast to mass practice (Madsen, 1963). Thus, it would be advisable for the clinician to provide the retardate with short but frequent practice sessions on his day-to-day tasks.

B. Learning of Concrete vs. Abstract Concepts

The retardate has been observed to be less able to grasp abstract concepts as opposed to concrete concepts when compared to individuals of normal intelligence (Werner, 1948). Therefore, the more meaningful and concrete the material, the more apt the retarded child is likely to learn.

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EDUCABLE MENTALLY RETARDED

by Robert L. Erdman, Ed.D.

1. Personal Criteria and/or Informal Methods for Identifying this Disabled Child

Most of the informal methods employed for identifying educable mentally retarded children are similar in nature to general informational child study techniques.

School activities include a wide variety of informal and formal situations which provide excellent opportunities for observing individual differences within a given child and between children in a given group. These situations for the most part are represented in the typical schedule of school activities and do not require any special materials or situations. What is required is an awareness on the part of the teacher for observing differences that interfere or disrupt learning patterns in children.

When observing specific behavior, caution must be exercised not to assume the underlying causes without more formal child study. This principle becomes particularly critical in the case of educable mentally retarded children because so many of the observable behaviors may be similar in nature to other disability patterns. The critical factor is to be able to describe as accurately as possible these behaviors so that they may be used as a basis for more formal assessment techniques.

The primary distinguishing characteristic of educable mentally retarded children is the discrepancy between their rate of mental development and chronological age. For example, an EMR child with a chronological age of six will be functioning at a three to four year mental level and will probably maintain this slowness in mental development throughout his school years. Thus, a teacher may observe the following:

(1) A general lack of readiness for traditional school subjects (reading, writing, arithmetic, spelling, etc.); the EMR child will not be ready to perform at an achievement level commensurate with his chronological age.

(2) His rate of academic progress will be about one-half to three-fourths the rate of the average child in the classroom; he cannot be expected to achieve in one year what the average child does.

(3) A general slowness in specific intellectual functions required for school performance such as low in memory auditory and visual materials, poor performance on verbal and nonverbal type activities, difficulties in generalizing, and disturbances in perceptual and conceptual abilities.

(4) His play interests will correspond more closely to his mental level than to his chronological age; thus, he frequently selects younger playmates and engages in play activities appropriate for younger children.

In addition to the observable slower rate of mental development and poorer performance in intellectual functions, a teacher may observe the following:

(1) A short attention span and lack of concentration when material is not appropriate for his mental level; a teacher could expect that attention and concentration will improve as material is presented that is commensurate with mental level.

(2) A low frustration tolerance (e.g., excessive aggressive or withdrawal type behavior) when the expectation to achieve is matched with chronological age; the frustration tolerance can be increased as level of material is more closely matched with mental level.

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THE TRAINABLE MENTALLY RETARDED

by Mabel Eide, B.A.

1. Legal Definition of Mental Retardation

The basic definition of mental retardation adopted by the American Association on Mental Deficiency in May, 1960 is:

> Mental retardation refers to subaverage general intellectual functioning which originated during the developmental period and is associated with impairment in adaptive behavior. (Heber, 1961)

To quote from the AAMD manual:

> The subaverage general intellectual functioning group includes all individuals whose performance on suitable objective tests of general intellectual ability is more than one standard deviation below the population mean. The upper limit of the developmental period is considered to be approximately sixteen years.

Adaptive behavior is manifested in three principal manners: 1) maturation; 2) learning and 3) social adjustment. Each of these three factors assumes primary importance during a certain stage of the developmental period. Thus, maturation, which refers to the rate of development of sensory motor skills such as crawling, walking, talking, etc. is the important criterion of adaptive behavior during the pre-school years.

Learning ability refers to the facility with which knowledge is acquired as a function of experience. Impaired learning ability, then, is of particular importance in mental retardation during the school years.

Social adjustment is particularly important as a qualifying condition of mental retardation at the adult level. At this life stage social adjustment is assessed in terms of the degree to which the individual is able to maintain himself independently in the community and in gainful employment as well as by his ability to meet and conform to other personal and social responsibilities and standards set by the community.

2. Practical Definition

(1) Layman Information

The following are characteristics listed by laymen when asked how they would describe a trainable mentally retarded person:

A. low mental ability
B. not capable of performing school tasks successfully
C. capable of learning self-care habits
D. has visual and/or auditory weaknesses
E. has difficulty in remembering what he sees or hears
F. likely troubled with poor motor coordination
G. not able to work in competitive society
H. needs to work under supervision in a sheltered workshop
I. requires economic support throughout his life
J. able to learn to get along with people

On the basis of a study of definitions of mental retardation found in legislative statutes and in various states' regulations governing implementation of these statutes, Kirk (1957) suggested the following characteristics of mentally deficient children: For school purposes a trainable or severely retarded child is one who:

A. is of school age;
B. is developing at the rate of one-third to one-half that of the normal child (IQ's on individual examinations roughly between 30 and 50);
C. is ineligible for classes for the educable mentally retarded but will probably not be custodial, totally dependent or require nursing care throughout his life;
D. has potentialities for social adjustment in the home or neighborhood and can learn to share, respect property rights, cooperate in a family unit and with neighbors;
E. has potentialities for self-care tasks (such as dressing, eating, toileting) and can learn to protect himself in the home, school, or neighborhood;
F. has potentialities for economic usefulness in the home and neighborhood by assisting in chores around the house or in doing routine tasks for remuneration in a sheltered environment under supervision, even though he will require some care, supervision, and economic support throughout his life.

(2) Etiology

The causes of mental retardation can be discussed under three main categories: 1) organic (before, during, and after birth), 2) genetic or inherited, and 3) cultural or environmental.

Acquired Organic Causes

Organically caused mental retardation is characterized by definite central nervous system pathology which is not hereditary. The defect in the brain or central nervous system may arise before birth (prenatal) or after birth (postnatal), as a result of injury, disease, and toxic conditons.

The health of the mother during pregnancy may affect not only the physical but the mental health and development of her child. Maldevelopment of the embryo or fetus can be the result of infection. A classic example is the case of German measles (rubella) if contracted during the first trimester of pregnancy. Toxemia, syphilis, influenza, encephalitis and other diseases are likely to produce a defect in the embryo.

Investigation has disclosed a connection between mental retardation and incompatible Rh factors in the parents and the child. When obstetricians know that the parents are Rh incompatible, they can prevent mental retardation or cerebral palsy by transfusing the baby's blood at birth.

It is also known that kidney disease with consequent high blood pressure in the mother may cause neurological disturbances in the infant. High blood pressure is often responsible for prematurity, and prematurity predisposes the newborn baby to disorders of the nervous system. Disorders of the nervous system go hand-in-hand with subnormality.

Some investigators claim that repeated X-ray or radium treatment of the mother during pregnancy may result in some trauma to the brain of the child. However, it is felt by most workers in the field that X-ray radiation causes damage only if administered very early in the pregnancy.

The U. S. Government at present is conducting a research project in 11 large maternity centers throughout the country in order to determine what effect conditions of the pregnancy have on the fetus; over 40,00 pregnancies are being carefully followed and evaluated for disorders. The emotional status of the mother is one of the most important factors being studied.

Birth Abnormalities

An insufficient amount of oxygen in the brain right after birth is known as cerebral anoxia. If this condition lasts more than a few minutes, some brain cells may die and some symptoms of brain disorders may manifest themselves.

Difficult labor, prolonged labor, or premature separation of the placenta may cause neurological disturbances in the newborn by producing cerebral anoxia.

Injuries to the baby's head during birth resulting in hemorrhages in the brain or its covering may result in mental deficiency.

Postnatal Causes

Mental retardation can be caused by disease and injury after birth and during the period of infancy or early childhood. Encephalitis or inflammation of the brain may be followed by various degrees of mental retardation. The inflammation is usually due to bacteria or to a viral infection.

Another type of inflammation of the brain is a forerunner of impaired mentality; it is caused by a parasite and is known as toxoplasmosis.

Meningitis is an inflammation of the covering of the brain; the infection may spread to the brain proper under the meninges. When the damage extends to the brain, mental retardation usually follows. Sometimes the retardation is due to pressure on the brain due to increased amounts of cerebrospinal fluid as a result of meningitis.

Practically all lead poisoning in children affects the nervous system and is invariably followed by mental retardation.

Metabolic, Immunologic and Glandular Disorders

Phenylketonuria results from a genetic error or metabolism and is associated with mental retardation. In phenylketonuria the central nervous system is damaged by the improper metabolism of particular foodstuffs after birth when the aid of the mother's metabolic, excretory, or hormonal systems is no longer available. This inherited condition is easily detected by simple tests that can be routinely administered to infants for the presence of phenylpyruvic acid in the urine. Treatment consists of a phenylalanine-free diet. Dietary treatment should begin within the first few weeks of life. The majority of affected individuals without treatment show severe retardation.

Galactosemia is a congenital disorder in which there is an absence of the enzyme required to metabolize a carbohydrate constituent in milk. Unless the diet is corrected severe mental deterioration or death result.

Idiopathic Hypoglycemia results from an unidentified error in carbohydrate metabolism, the first signs appearing before age two. Speech and visual disturbances are noted along with other neurological manifestations.

Lipoidosis or fat disorders, also known as Tay Sach's disease, is transmitted by a single autosomal recessive gene and is characterized by very early onset and rapid progression of the disease. Severe mental retardation and death, usually before age 5, results.

Cretinism results from insufficiency or total lack of thyroid hormone. Cretinism is a disorder of endocrine function resulting in stunted growth, underdevelopment of bone structure and mental retardation.

Unknown Prenatal Causes

Microcephaly refers to a reduced circumference of the cranium with accompanying distortion of the cranium to a conical shape.

Hydrocephaly is a comparatively common syndrome characterized by an increased volume of cerebrospinal fluid within the skull that ordinarily produces an enlargement of the cranium. It may occur as the result of prenatal factors, birth trauma, or postnatal injury, tumor, or infection which affects the amount of fluid within the skull.

Mongolism (Down's Syndrome) constitutes the largest incidence of a single syndrome accompanied by severe retardation. It is caused by an extra or deviant chromosome. The majority of mongoloid children have a total chromosome count of forty-seven instead of the normal forty-six. The presence of a third chromosome matching one of the small pair, number twenty-one, has been discovered to be causal.

The risk of having a mongoloid child varies greatly with the age of the mother. Three-fourths of mongoloid births occur in pregnancies of mothers over age 40. The mother who is 40 to 44 years-old runs a risk of giving birth to a mongoloid child in about 1 in 70 births; the mother over 45, 1 in 38. Young mothers account for a sizable percentage of mongoloid children; about one-fourth of mongoloid children are born to mothers under 30 years of age. In classes for trainable children, one-third of the enrollment usually consists of mongoloid children.

Cultural Environmental Causes

A number of studies consistently report that a substantial majority of the mentally handicapped live in the lower socio-economic cultural areas of the community where the education of the parents is somewhat less than average and the health and nutritional standards do not reach national average.

Often children coming from "substandard" homes have one or both parents or sisters and brothers who are mildly retarded. In contrast there are students who come from predominantly average or higher educational and economic status homes, yet are considered to be severely retarded. These children are usually suffering from the effects of defective genes belonging to the clinical syndrome categories such as mongolism, etc.

Among severely and profoundly retarded children there appears to be an especially high incidence of psychotic-like behavior as in childhood schizophrenia or loss of reality contact and preoccupation with an inner imaginary world.

Unfortunately, behavior and delinquency problems stem from the discrepancy between the retardate's capacity and the requirements of his social behavior.

Relation, If Any, To Other Exceptionalities

An important syndrome in so far as mental retardation is concerned is the convulsive disorder known as epilepsy. Epilepsy is not always associated with mental retardation, although intellectual impairment often is its companion, either as a result of the damage which precipitated the epilepsy, as the result of damage caused by the epileptic attacks, or as the indirect result of the social-psychological patterns of living into which the epileptic child is sometimes forced.

Epileptic seizures are quite common among mentally retarded children. The grand mal seizure is a major attack and consists of sudden loss of consciousness and of generalized muscle movement. The seizure may be preceded by an aura--a warning which actually comprises part of the attack.

While in a petit mal seizure (minor attack) the child does not fall, but assumes a fixed, staring appearance for a few moments, then resumes activity. Other children exhibit epileptic equivalents, such as inappropriate laughing or giggling, irrational, often violent behavior, dizziness, and headaches.

Retarded children are especially vulnerable to emotional problems because of their intellectual handicaps. Their deficiencies in judgment, in understanding of their environment, and in anticipation of the results of their behavior lead them to experience failure and punishment. When the retarded child fails to excel in such intellectual activities, early economic self-sufficiency, popularity, physical attractiveness or athletic ability, he often faces open rejection from parents and siblings. With few exceptions emotional problems retard or inhibit intellectual growth. Psychoanalysts interpret many instances of mental retardation as defective ego development, resulting primarily from anxiety and other psychogenic factors.

Defective speech is a problem among the mentally deficient; such a youngster is no different in his speech development pattern than the normal child except that with him these processes are slower to develop. Only the most severely retarded are unable to learn to speak. The diagnosis, degree of retardation, factors involved in speech delay, and the home routine are important considerations in recommending speech therapy with a child. Clinically it is found that many mentally deficient children with good social awareness respond well to speech therapy at approximately five to six years of age, or older. However, children with serious hearing defects, aphasic difficulties, dysarthria and other special disorders should receive earlier special training.

3. Personal Criteria and/or Informal Methods For Identifying This Child

In identifying this special child one may notice on various occasions that a baby is in some respects "different" from other babies. Perhaps he lies in his crib indifferently; he does not smile; he does not try to grasp things that are offered to him; he does not kick his legs. Perhaps, he does not notice things that should interest a baby; things like colors, sounds, movements. Maybe he is ill tempered, always whining. Perhaps he moves in an odd, jerky manner. Maybe he does not try to sit up at an age when other children manage to sit. Perhaps he is finding it difficult to learn to walk or maybe he walks unlike other children: he may have a rolling gait or other strange manners. He may not be making progress in his speech: he may stutter or speak a few words that are barely understandable. A child may not smile at you because he does not see you. A young child may appear inattentive to normal conversation because he does not hear you.

Mongoloid children usually constitute one-third of the enrollment in classes for trainable mentally retarded. The mongoloid child can be recognized by physical features such as epicanthic folds about the eyes; stubbed neck; short fingers, with curving of the little finger; small chin and ears; short, broad hands and feet; sparse, fine straight hair; speech disorders and a course low-pitched voice. He is usually an affectionate, happy, friendly child, although the opposite personality traits--aggressive, hostile, and uncooperative --may be evident in a child whose home situations is lacking in affection and approval.

The child who is a potential candidate for the trainable class can usually be identified by visible discrepancies in his physical development in terms of height, weight, and motor coordination. He may be extremely overweight or very thin and underdeveloped; he may have grown much taller than other children of the same age, but more often he tends to be below normal in height. His lack of self-concept and self-awareness may be caused by parental rejection, over-protection, rigidity or pressure.

4. Characteristics

(1) Behavioral

The trainable mentally handicapped child grows mentally at about one-half or less the rate of the average child. Thus we see a TMR child of ten years with an IQ of 35-50 and a mental age of three to four years. He is usually below his chronological age in all areas of development such as height, weight, motor coordination, language development, vision, hearing and social maturity.

As stated above, there is often a wide range of differences between the TMR child and the average child. Also there may be discrepancies within each TMR child. In testing some will show a consistent level of abilities across the functions tested while others may be especially high in verbal skills while testing low in manipulative tasks or vice versa.

Studied observations of characteristics of those classified as TMR disclose a wide range of mental abilities, physical conditions, behavior patterns and social competencies. Differences within the group may vary from hyperactivity to apathetic inactivity; from serious disruptive behavior to amiable conformity; from an essentially normal physical appearance to one of gross deformity. Intellectually all are severely handicapped; however, the heterogeneity of the group is also evident.

Other observable characteristics are that the TMR child will be slower in learning tasks, and will have a limited attention span. Through experience one finds that his learning is based on structure and progression. His tasks must be sequential, from the very simple to the more complex, and his learning by repetition of the task and activities at which he can succeed.

(2) Academic

There are varying degrees of learning potential and range among trainable students. Since no two children are alike, the maximum growth limit is different for each. Generally, academic skills are minimal. A few of those students having more ability than others may master second and possibly third-grade reading skills and be capable of developing number concepts on a limited basis.

The TMR training should consist of experiences that do not involve insight or mastery of basic academic skills, but will primarily be habit formation. For example (there are expected limits, but the establishment of desirable habits is possible and necessary) a six-year-old child with an IQ of 50 or less cannot be expected to do the things that are usual for a three or four-year-old. The establishment of such behavior habits as elimination control, talking, feeding, dressing, cleanliness, politeness, etc., cannot be established as early as in normal children and will understandably take longer to establish, but it is possible.

The younger TMR children, during the first few years, pursue a curriculum which includes developing the ability to play, developing speech, encouraging initiative, learning to work and play in a group, modification of undesirable personal traits through various techniques of behavior modification, instilling a sense of acceptance and achievement, and learning those skills necessary for the students' self-help, health and safety.

The trainable student will not attain personal, social, or economic security without supervision and will require a longer period of education and training than normal students. The academic education as well as training in self-care, social adjustment, work habits, manual and vocational training and usable diversional activities should extend to the age of 21 if possible.

The trainable student learns best through the use of a very consistent approach. His training requires that the same thing be done in the same way, many times. In training the student, attention is paid to the performance of the task at hand or the skill being mastered. The tasks must be simple --simple enough for him to succeed.

The emphasis must be on doing with pupil involvment in whatever is being taught. The activities must be relevant to the child's social, intellectual, and physical maturity. These students respond to rewards (stars, candy, etc.) and to praise and encouragement. The procedure used with the TMR must be based on an awareness of their uneven, poorly integrated levels of development; their rate; amount, and ways of learning.

School problems are expected with TMR students because of their emotional handicaps. Handicaps such as hyperactivity, failing to anticipate the consequences of their own actions, instability and poor group acceptance only add to their already established physical and mental difficulties.

(3) Functional

The younger TMR student is capable of learning to share, take turns, and follow directions carefully and willingly and know the rudiments of social participation. As he grows older his social potential would consist of establishing cooperative behavior by being able to get along with other adolescents and adults, learning self-control in work and play situations, and respecting the rights and property of others. Very few TMR students are capable of social or economic independence. However, cooperation with family, neighbors, and school peers are all within his potential.

In TMR's of all ages, one of the most easily observed social behaviors connected with play interests and companions, is characterized by enjoyment and contentment with play materials and companions many years below the student's chronological age.

Inability to build or maintain satisfactory interpersonal relationships with peer groups, teachers, adult groups, and later, on the job, is often characteristic of the trainable student; therefore, prior to and during adolescence, he should learn to be cooperative, well-behaved, and well-mannered, do his work cheerfully, stay with his job and be willing to do what he is asked to do. These qualities will be of great value to the TMR students who will work and mingle with other adults.

The TMR's earning capacity is limited by the very nature of the kind of work he is capable of doing; thus, he will always need additional economic support.

He needs supervision and will not be capable of establishing completely independent living quarters, but will be able to function in the cooperative community homes now available in many areas for older retardates.

5. Recommended Resources for Additional Information

The following is a list of schools, hospitals and agencies available for further understanding and information of the trainable mentally retarded:

Granite Habilitation Center
3605 South 380 East
Salt Lake City, Utah

Garfield School
1838 South 1500 East
Salt Lake City, Utah

Columbus School
2530 South 500 East
Salt Lake City, Utah

American Fork Training School
American Fork, Utah

Salt Lake Association for Retarded Citizens
2953 South 7th East
Salt Lake City, Utah 84106

Council for Exceptional Children
1920 Association Drive
Reston, Virginia 22091

Utah Division of Mental Health
119 East 2100 South
Salt Lake City, Utah 84601

Utah State Board of Education
Special Education
University Club Building
Salt Lake City, Utah

Primary Children's Hospital
320 12th Avenue
Salt Lake City, Utah

Children's Center
1865 Medical Drive
Salt Lake City, Utah 84112

Easter Seal Workshop
4868 South State
Salt Lake City, Utah

Utah Speech and Hearing Center
705 South 900 East
Salt Lake City, Utah

Utah Association for the Prevention of Blindness, Inc.
2033 South State
Salt Lake City, Utah

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LEARNING DISABLED

by C. W. Freston, Ph.D.

DEFINITION

Traditionally, school programs for handicapped children have identified and classified the children according to major handicaps leading to placement into programs for the deaf, mentally retarded, blind or partially sighted. One result of the thrust toward a qualitative increase in services for the educationally handicapped has been the identification of a heterogenous population who do not fit into any of these categories, yet are unable to learn within the ordinary classroom. A mnemonic definition of this population states that these children "are not blind, yet they can't see (perceive), are not deaf, yet they can't hear (comprehend)."

The commonality inherent in this population resides in a significant intra-individual difference; thus a discrepancy in ability serves as the primary distinguishing characteristic of children labeled as learning disabled. The emphasis on discrepant abilities within the individual precludes a clear-cut, universally accepted definition. Emerging from the plethora of definitions are certain commonalities which help to establish the parameters of this population. Each includes a statement of who these children are not (the exclusion clause). Each is also talking about specific deficits in learning processes which result in developmental discrepancies or uneven development patterns (the disparity clause). Some definitions get at possible causes (e.g., central nervous system dysfunction). What is not explicitly stated in most definitions but has nonetheless been accepted is that these children require individual diagnosis and specific methods of remediation geared to their areas of deficit.

One of the more recent definitions of learning disabilities occurs in Federal legislation, Public Law 91-230 (dated April 13, 1970) which states: "The term 'children with specific learning disabilities' means those children who have a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which disorder may manifest itself in imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations. Such disorders include such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. Such term does not include children who have learning problems which are primarily the result of visual, hearing or motor handicaps, of mental retardation, of emotional disturbance, or of environmental disadvantage."

Making a differential diagnosis of learning disability and thus eliminating inclusion into other categories of exceptionality is done on the basis of two fundamental presumptions regarding this population: generalized integrity and a deficiency in learning (Johnson and Myklebust, 1967). Historically there has been a population of children labeled mentally retarded who have been reclassified as learning disabled. In-depth analysis of their abilities (as opposed to consideration of a global IQ score) has revealed that they did not possess the overall intellectual inferiority characteristic of the retardate; rather, they exhibited a pattern of disabilities which, with proper remediation, allowed them to function at a near normal level. Children with learning disorders in the perceptual, conceptual, language or academic subject areas tend many times to have correlated behavior disorders of hyperactivity, lack of attention and general maladaptive behavior. However, not all children with behavior disorders can be classified as having learning disabilities which require specific remediation. It should also be noted that there is often an overlapping of handicapping conditions of multiple involvement. In such cases, the children benefit most if their learning disability is treated directly while classroom adjustment is provided for their other handicapping conditions (Kirk and Kirk, 1972).

ETIOLOGY

The causes of learning problems are not clear cut and easily identified. In this area there is a dichotomy between the medical profession, which is concerned with psychoneurological etiology, and the educational profession, which is concerned with the behavioral correlates pertinent to classroom learning. The term "learning disabled" is primarily an educational concept. According to Kephart (1967) the causes of learning disabilities seem to cluster into three major categories: brain injury (central nervous system dysfunction), emotional disturbance, and experience.

Causes of brain-injury are the most well-documented. They are usually divided into those occurring prior to birth (prenatal) and after birth (post-natal). Maternal illness (e.g., German measles) during pregnancy, and the age of the parents (over 35) are examples of prenatal causes. The most significant perinatal birth injury is due to lack of oxygen (anoxia). Some causes of anoxia are a difficult labor, congenital defects and the attendant exigencies of premature birth (e.g., oxygen control in an incubator). Nervous system damage can occur after birth from head injuries, meningitis and toxic conditions such as lead poisoning.

Emotional disturbance as the cause of a learning problem is likely to be the result of an emotional trauma which has been prolonged over a period of time, at least to the degree where there is interference with the functional relationships of the central nervous system. Behavior in such cases approximates that resulting from brain injury (e.g., hyperactivity, explosivity, etc.) including disruption of the learning process.

Experience as a cause includes factors such as developmental lag and lack of environmental experience. A child who has not experience manipulating toys and writing materials will probably be lacking in the fine motor coordination expected of children entering kindergarten and first grade. Deprivation of auditory experience, that is using the tools (words) which culminate in logic and reasoning powers, can cause a developmental lag in language use. Visual deprivation results from lack of exposure to such visual aids as picture books, Experiential deficits are not confined to any socio-economic group or nationality.

Identification of the causes of learning problems can be useful in the proper selection of remedial programs. Developmental information, ascertained from the parents, provides important clues to the etiology of the learning disability.

INFORMAL METHODS OF IDENTIFICATION

A broad knowledge of normal child development and an understanding of the processes involved in learning are essential prerequisites to informal identification of learning disabled children. Inconsistencies within an individual's overall rate of development and level of abilities are the crucial clues in identification. Sensitivity to the concerns expressed by those in daily contact with the child (specifically parents and teachers) yields important details directly leading to informal identification. For example, children with auditory problems are often characterized as "never paying attention" and "never following directions." Or a child who is hyperactive may be characterized as one who "won't concentrate for more than a few minutes." Perhaps most disturbing to teachers are the children who don't respond to their teaching techniques, despite modifications, and can't learn to read although they appear normal otherwise.

Use of an informal questionnaire can be of utmost help in distinguishing the learning disabled child from his peer group.

Broad categories used to elicit such information are:

(1) Auditory Comprehension and Listening, e.g., ability to follow directions and comprehension of classroom instruction;
(2) The Spoken Language, e.g., functional vocabulary and ability to recall words;
(3) Orientation, e.g., utilization of time concepts and spatial orientation;
(4) Motor Development, e.g., gross motor and ability to manipulate tools and objects;
(5) Behavioral Characteristics, e.g., social acceptance, and reaction to responsibility.

CHARACTERISTICS

Characteristics of learning disabled children can be most easily considered by arbitrarily grouping them into six catagories: 1) motor activity, 2) emotionality, 3) perception, 4) symbolization, 5) attention and 6) memory. The categories are not mutually exclusive; in reality, learning disabled children tend to display behavior associated with several (and sometimes all) categories. Each of the characteristics will be considered as a separate entity although in practice there is no clear-cut distinction. For example, a hyperactive child usually has emotional involvements such as explosive behaviors as well as difficulties in attending. The following discussion is adapted from Myers and Hammill (1967); suggestions for further reading are given under Recommended Resources.

(1) Disorders of Motor Activity.

There are four motor activity disorders associated with learning disabilities: hyperactivity, hypoactivity, incoordination, and perseveration. Hyperactivity, defined as excessive mobility, is the most common form of motor disability. In general such children are restless, inattentive, and have erratic behavior. This is perhaps one of the teacher's most consistent complaints about learning disabled children. Hypoactivity is defined as a lack of sufficient motor activity. The child is apt to be quiet and lethargic. Because of the lack of obtrusive classroom behavior, this disorder is seldom identified.

Incoordination has two primary characteristics: physical awkwardness and/or poor motor integration. It is commonly found in learning disabled children. Children who have this problem exhibit such behaviors as:

A. poor performance on tasks requiring a high degree of coordination such as running and skipping;
B. walking gaits which appear rigid and stiff;
C. poor performance on tasks requiring fine motor skills such as drawing and writing;
D. difficulties in balance and clumsy behavior in general.

Perseveration is defined as the automatic and involuntary continuation of behavior. It can occur in almost any expressive motor behavior such as speaking, writing or drawing. In speech, a child may have difficulty shifting from one topic to another. In writing, a child may make an error, erase it, then make the same error again. In drawing, he may cover an entire page with one color.

(2) Disorders of Emotionality.

Emotional instability is a frequently mentioned characteristic in the literature concerning brain dysfunction in children. The emotional ability associated with this syndrome often results in lack of self-control, impulsive behavior and temper tantrums or outbursts having no apparent cause.

(3) Disorders of Perception.

Perceptual disturbances are characteristic of learning disabled children and can be defined as the inability to identify, discriminate and interpret sensations. The terms "decoding problem" and "receptive difficulty" are used interchangeably to describe this problem. Behavioral correlates are inadequate reproduction of geometric forms, figure-ground confusion or letter reversals or inversions. Children exhibit symptoms in several areas of perceptual disorders at one time.

There is a quantity of literature indicating the importance of perceptual adequacy in concept formation, abstraction ability, and cognitive symbolic behavior. Early remediation is of prime importance to minimize later academic failure.

(4) Disorders of Symbolization.

Symbolization is one of the highest forms of mental ability and involves both concrete and abstract reasoning. In the process of symbolization the brain integrates perceptions and memories and produces thought processes or chains. This process can be divided into receptive (decoding) and expressive (encoding) activities. Poor performance in four subdivisions of symbolization are most frequently found:

A. Receptive-Auditory. This disorder results in poor understanding of spoken symbols, requests to repeat and confusion of commands or directions.
B. Receptive-Visual. Children with this problem are unable to comprehend what they read and often subvocalize.
C. Expressive-Vocal. This problem results in a difficulty in formulating thoughts for speech.
D. Expressive-Motor. This is concerned with the inability to write (dysgraphia) as well as produce nonvocal communication.

Disorders in any of these areas can prevent attainment of success in academic pursuits.

(5) Disorders of Attention.

School success demands that a child be able to focus his attention at the appropriate time as well as move on to a new task when directed to do so. The problem of insufficient attention is labeled distractibility, hyperawareness, or short attention span. The child may be unable to block out stimuli such as noise from outside the room, or the buzzing of the neon lights.

(6) Disorders of Memory.

Memory is a postulated process which is not directly observable. Disorders of memory involve difficulty in the assimilation, storage and retrieval of information. They may be associated with visual, auditory or other learning processes. Memory has a commanding influence on learning and disorders of memory frequently occur in conjunction with the other disorders mentioned above.

The purpose of the delineation of the characteristics of learning disabled children is to give an idea of what this heterogenous population is like. Now that this has been accomplished it is necessary to reiterate the basic fact about these children--each one has a different pattern of abilities and disabilities. Dr. Jeanne McCarthy, now at the University of Arizona, underscored this problem beautifully in her "Fifteen-Ten Commandments of Learning Disabilities." Number 10 states:

> Thou shalt never again list a set of characteristics of children with learning disabilities. Thee are now acutely aware of the fact that each child with a severe learning disability is idiosyncratic unto himself.

This is a fitting note on which to end a discussion of this complex and challenging field.

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LEARNING DISABILITIES

By Betty D. Harrison, Ph.D.

1. Legal Definition

Children with a special learning disability exhibit a disorder in one or more of the basic psychological processes involved in understanding or in using spoken or written languages. These may be manifested in disorders of listening, thinking, talking, reading, writing, spelling, or arithmetic. They include conditions which have been referred to as perceptual disorders, brain injury, minimal brain dysfunction, dyslexia, developmental aphasia, etc. They do not include learning problems which are due primarily to visual, hearing or motor handicaps, to mental retardation, emotional disturbance, or to environmental disadvantage (first annual report, National Advisory Committee of Handicapped Children, January 31, 1968, p. 34, U. S. Department of Health, Education and Welfare, Office of Education).

2. Practical Definition

Children with learning disabilities have a difficult time learning even when they want to, as contrasted with motivational or emotional problems wherein the child can learn if he will just put forth the effort. The pattern of performance may be very erratic with fluctuations from day-to-day, subject-to-subject, or word-to-word on a single printed page. Reading is usually the most noticeable deficiency area. A normal child may need up to 600 exposures to a single sight word in order to master that word to the immediate recognition level; a learning disabled child may need 1200, 1900, or possibly more exposures before he has mastered the word. And he is less likely to receive the practice and exposures than the normal child. The learning disabled child's problem may show up only in a few, readily identifiable situations, such as reading, or the problem may be so pervasive that it extends into all areas of his life and disrupts his social, physical, and emotional as well as intellectual activities.

The exact etiology of a child's learning disability may never be known. Tests may reflect the erratic pattern of the child without really telling us why he is having the learning problem. Not even the EEG can detect all learning disabled children. While it is well to have as much medical, psychological, academic, and social information as possible on the child with suspected learning disabilities, treatment should not be delayed until this information is gathered in its entirety. It is assumed that special learning disability children have some type of impairment to the central nervous system. When the behavior of the child indicates that such an impairment may exist, the child should be placed in an appropriate treatment program as soon as possible as the learning disability is likely to become more severe with age due to the emotional overlay which may develop as a result of repeated exposure to experiences of failure in the classroom as well as in the home situation.

Learning disabled children, by legal definition, are assumed to have average or better intelligence. However, test results may reflect the disability rather than the actual IQ and should be interpreted by profile of performance rather than by global IQ scores. It is also possible for a mentally retarded or blind child to have a learning disability as a secondary handicap. In many cases, the lack of progress shown by mentally retarded children in special classes may be due to failure to treat the secondary learning disability. In general, it is better to assume that a child has a learning disability and give him the careful programming recommended in a treatment program for learning disabilities children. In summary, a learning disability may occur as a secondary handicap to a mentally retarded, blind, hard-or-hearing, etc. type of child or it may occur as a primary handicap to a child with average or better intelligence determined by a profile of performance on tests such as the WISC, ITPA, etc.

3. Descriptors

The ten characteristics most often attributed to the learning disabilities child are 1) hyperactivity; 2) perceptual-motor impairments; 3) emotional liability; 4) general coordination deficits; 5) disorders of attention; 6) impulsivity; 7) disorders of memory and thinking; 8) specific academic disabilities; 9) disorders of speech and hearing; 10) equivocal neurological indicators such as soft neurological signs and electroencephalographic irregularities such as an abnormal EEG.

4. Personal Criteria and/or Informal Methods for Identifying This Disabled Child

Observational checklists may be used by teachers and observers. The merit in behavioral checklists is in comparison with expectation for the child's age group. Inasmuch as the goal for most learning disabilities children is to return them to a regular classroom setting or to keep them in a regular classroom setting, a knowledge of the child's strengths and weaknesses in classroom and social behavior is very helpful. The more specific the checklist, the more likely it will be helpful in planning the treatment program for the child.

5. Characteristics

(1) Behavioral--profiles on tests such as the WISC or the ITPA which show extreme highs and lows and particularly reflect average or better performance in some areas are extremely useful in identifying and planning for the child. A flat profile, particularly below the chronological age of the child very seldom indicates a learning disabled child. The same is true with regard to measurement on standardized tests, whcih frequently show a wide range of scatter from basal to ceiling and variable performance in different tasks at the same age level for the learning disabled child.

(2) Academic--the only common characteristic learning disability children have is discrepancy between what they should be able to do and what they are doing. This may be specific to the subject matter area--some can do math but not reading while others show the reverse. But almost all learning disability children have difficulty with spelling and an inability to relate sound symbol to printed symbol.

(3) Functional Capacities--the same perceptual problems which interfere with academic achievement may also interfere with a child's social relationships. Sequencing problems make it difficult to participate in game situations; an accidental bump into somebody in the hall may be interpreted as an act of aggression; a perseverative child may repeat all day his frustrations and teasing on the bus on the way to school in the morning. Social problems must be treated the same as academic problems with specific programming.

6. Recommended Resources for Additional Information

(1) For further understanding

A. State Guides such as the Handbook for Parents and Teachers on Learning Disabilities by Polk County Board of Education, 112-116 Eleventh St., Des Moines, Iowa, 1970 of the Utah State Handbook for Learning Disabilities available from Special Education Services.

B. The Slow Learner Series from Charles E. Merrill Publishing Company, 1300 Alum Creek Drive, Columbus, Ohio, 43216.

C. The extensive publication list available from Academic Therapy Publications, San Rafael, California 94901. (Example: Building Spelling Skills in Dyslexic Children by John I. Arena)

D. The Dimensions in Early Learning Series from Dimensions Publishing Co., San Rafael, California 94903. (Example: Arithmetic and Mathematics by Carl Bereiter)

E. The Developmental Learning Materials, 3505 N. Ashland Avenue, Chicago, Illinois 60657 (Example: Helping Children with Reading Disability by Ruth Edgington)

F. The Children's House Magazine, P. O. Box 111, Caldwell, N.J. 07006.

G. The pamphlet for parents by Margaret Golick (referenced through Association for Children with Learning Disabilities)

H. Psycholinguistic Learning Disabilities: Diagnosis and Remediation by Samuel and Winifred Kirk, University of Illinois Press, 1971.

I. Children with Learning Disabilities by Janet W. Lerner, Houghton Mifflin Company, 1971.

J. The Remediation of Learning Disabilities by Robert E. Valett, Fearon Publishers, 1967.

CHECKLIST FOR CHILDREN WITH PERCEPTUAL OR PSYCHOMOTOR PROBLEMS

1. Behavioral Description, general symptoms.

Symptom	Manifestation
HYPERACTIVITY	This child shows restlessness, inability to sit still or to stand without wiggling or squirming.
HYPERKINESIS	He shows involuntary muscle movement; he cannot control muscular over-activity.
INCOORDINATION	He has awkward, jerky movements, poor balance, difficulty with grasping, manipulation, small muscle coordination and clumsiness. This is often due to the concommitant fault of slow maturation.
CRIPPLING OF EXTREMITIES	He shows limping, limb favoritism, arm or leg weakness, withering of limbs.

Symptom (cont.)	Manifestation (cont.)
CONVULSIONS	These may be short (petit mal) or prolonged (grand mal) sever muscular spasms, sometimes unconsciousness occurs.
TALKATIVENESS	He is guilty of consistent chattering and irrelevant conversation. Disorganization of sentences is often seen because he may lose sight of goals while talking.
FLIGHTINESS	Lack of steadiness is found in these children.
EXPLOSIVE LAUGHTER	Sudden, loud and uncontrollable laughter is frequently seen.
ANNOYING, TEASING	The disturbing of others to gain attention to himself frequently occurs. He may also do it to distract others from his deficiencies in academic areas.
BLANKNESS	Black-out spells of a few seconds duration are not uncommon with the child who has psycho-motor disturbances.
2. Emotional Activity	
IMPULSIVITY	Often he reacts without thinking and demands immediate attention. He must be helped to develop inner controls on his behavior.
EXCESSIVE REACTION	He responds too quickly and too much to stimuli.
ANXIETY	He is overly worried, upset by failures, clinging.
INSECURITY	He is in constant need of attention and encouragement.
EXCITABILITY	This is another type of over-response to stimuli or extreme over-reaction to normal stimulations.
RAGE REACTION	Sudden, explosive anger with apparently little provocation.
DAY DREAMING	He withdraws from reality and problem situations.

Symptom (cont.)	Manifestation (cont.)
IRRITABILITY	He is touchy, cross and out of sorts.
3. Learning and Language	
DISTRACTABILITY	To these children, all items have equal value and they cannot concentrate on any one thing.
SHORT ATTENTION SPAN	The child cannot work at anything for a very long time and often does not finish tasks asked of him.
CONFUSION	This child misses the total concept (Gestalt): he often cannot figure out what is needed or wanted or what is going on.
RETENTION	This child's ability to retain information is poor, even for short items or bits of information.
PRESERVATION	This is a tendency to repeat an activity or phrase after the meaning and the purpose have ceased.
PERCEPTION- AUDITORY	He cannot distinguish isolated sounds against background noises.
PERCEPTION- VISUAL	The child cannot see a whole or Gestalt against a distracting background.
SPEECH	Stuttering, substitution of gestures and signs for speech, hesitant and slow speech.
PENMANSHIP	With these children, writing is poor because of defective muscular coordination. It is cramped because of psychological and physical restrictions and is irregular because he himself perceives the world about him in an inconsistent manner.
ARITHMETIC	Difficulties with number concepts, number retention and abstract figures are common with these children.

Symptom (cont.)	Manifestation (cont.)
COLORING	Usually the child cannot stay within lines due to the fact that he is unable to distinguish them from background material.
READING AND WRITING	Reversal of letters and words. He must be taught to look at letters and words.

IDENTIFICATION OF HEARING IMPAIRMENT

by Grant B. Bitter, Ed.D.

Although hearing impairment is considered to be an "invisible handicap," which interrupts the learning process through deficiencies in language growth and development, severe educational, social, intellectual, emotional, and psychological deficits can be prevented and/or minimized through early detection, adequate and accurate diagnosis, treatment, are, and education. Indeed, if the various dimensions of the child's environment--the family, school, community, and church--are dynamic and supportive, hearing impairment of any magnitude need not deter him from becoming functional, productive, and a full participating citizen with the culture.

Therefore, to better understand what hearing impairment is, and to be able to more adequately cope with the implications thereof, the following information is provided.

1. General Knowledge About Hearing

The Hearing Process: Sound waves pass through the ear canal, beat against the eardrum, causing vibrations in the chain (ossicles) of three tiny bones in the middle ear. The third bone, the stapes or stirrup, is the smallest bone in the human body. It fits into a tiny window between the middle and inner ear. As the stapes moves, fluid in the inner ear carries vibrations into the canal of a delicate spiral structure, the cochlea, where thousands of tiny sensory cells may be activated. Movement of tiny hairs stimulate nerve fibers to generate electrical impulses which are carried through the auditory nerve to the brain for interpretation. The whole middle ear is about as big as a green bean or pea seed; these three tiny bones could be placed on the tip of the little finger; the inner ear is even much smaller than the middle ear. Listening and talking are such an integral function of everyday living, through the process just described, that most people take hearing for granted and do not, therefore, always exercise wisdom in preserving it.

2. Conservation of Human Hearing and Need for Services

It is estimated that 15 million Americans have some degree of hearing impairment including 3 million children. From 250,000 to 300,000 persons in America are considered to be deaf--those for whom the auditory mechanism is extremely limited. In the United States and those areas of the world for which we have data, some 3.5 to 5 percent of school-age children have some degree of hearing loss. Therefore, disease, accident, noise prevention, and remediation are obviously important parameters of hearing conservation.

Specialists

The professionals who are concerned with the conservation and utilization of hearing include: the otologist, an M.D. who specializes in the diagnosis and treatment of the ear; the otolaryngologist, an M.D. who specializes in care of the ear, nose, and throat; the audiologist who specializes in hearing testing and hearing aid evaluations in regard to the nonmedical aspects of hearing disorders. The trained educator of the deaf and the regular classroom teacher with the supportive help of the interdisciplinary team, including the educational audiologist, the stratistician, speech or hearing clinician, the academic tutor, the social worker, the nurse, the doctor, school counselor, psychologist, and parents are important team members who participate in the organization and implementation of diagnostic and educational programs and evaluations.

Definitions

Hearing Impairment is a generic term which refers to children who have any degree of hearing loss (slight, mild, moderate, severe, profound). The audiometric assessment is identified by a unit called the decibel (db) which is defined as the intensity of sound as determined by the pressure of sound waves--based on the measurements as approved by the International Standards Organization (ISO).

Thus, hearing impaired children refer to those who have been diagnosed by a specialist as having a slight hearing loss of 27 db or more, ISO Standard; to those who have been diagnosed as having a profound hearing loss of 91 db or more (ISO reference).

Hard of Hearing children refer to those whose primary source for the development of speech and language comes through the auditory channel and whose sense of hearing is functional with or without the hearing aid. However, the use of amplification may be very beneficial.

Deaf children are those whose primary source for the development of speech and language proficiency is received through the sense of vision; however, the sense of vision is complemented by competent use of tactile, kinesthetic and most important, the auditory sense, which enhance listening and talking skills. Recent advances in prescriptive hearing aid fitting along with refinements in audiometric equipment are offering much greater advantages to the deaf in utilizing residual hearing.

Those who serve on the interdisciplinary team in the diagnosis of hearing impairment must be very cautious in delimiting definitions of hearing impairment to avoid the tyranny of rigid classification and stereotype. (Quantitative measurements in decibels or percentages, or by the qualitative terms of type of hearing loss, site of lesion, speech discrimination scores, and so on, must be considered only as important parameters in the diagnostic and educational process). Each child's potential must be assessed individually on the basis of not only degree of loss or type of loss but age of onset, intelligence, personality, age when education begins, quality of teaching, attitudes of family, church, school, community;--indeed, a multitude of physiological and environmental conditions must be considered. All aspects of the "functional child" must be weighed carefully.

Principal types of Hearing Impairment

Conductive: loss of hearing resulting from any dysfunction of the outer and/or through to the middle ear. The primary effect is a loss of loudness. Perception of sound is restored with an increase of loudness. Loss of hearing may vary from mild (27 to 40 db, ISO Standard) to moderate (56 to 70 db, ISO Standard) and rarely exceeds 70 db (ISO) through the speech frequency range. Medical treatment including surgery may often restore or significantly reduce this kind of hearing loss. Hearing aids are generally very useful.

Sensori-neural (perceptive or nerve impairment): loss of hearing resulting from a dysfunction of the inner ear. Speech frequencies affecting the clarity and intelligibility of speech are affected. This loss may vary from slight to profound (91 db or more, ISO Standard). There is no satisfactory response to medical treatment at present. The use of the hearing aid may be very helpful; early identification, diagnosis and education are of prime significance. Sensori-neural and conductive losses frequently occur together.

Central Impairment: results from a dysfunction along the pathways of the brain from the brain stem to and including the cerebral cortex. This impairment may be highly complex and frequently involves the symbolic processes of the mind in terms of receptive and expressive language.

Mental retardation, learning disabilities, behavioral disorders, epilepsy, cerebral palsy, visual impairment and other disorders may also be found in combination with hearing impairment.

Etiology (causal factors): Common diseases including virus infections, such as measles, German measles (rubella), scarlet fever, mumps, whooping cough, meningitis frequently cause hearing impairment of the sensori-neural type. Inflammation of the middle ear known as otitis media is also a very common cause of hearing loss. In addition, otosclerosis (a spongy-like mass that grows around the stapes, located in the middle ear) causes hearing problems. Foreign objects (peas, insects, excessive wax, etc.) that get into the outer ear canal may cause temporary loss. Injury and accidents such as blows to the ear, skull fractures, and conditions which cause intense pressure may also do damage. Certain medicines and antibiotics (aspirin and quinine to persons sensitive to them, and kanamycin, dihydrosterptomycin) may cause loss of hearing. Sustained sound of 80-85 decibels and above over a long period of time may induce hearing impairment, particularly in the higher frequency areas. Radiation exposure, and Meniere's disease (dizziness, nausea, ringing in the ears), as well as presbycusis (which is hearing loss due to aging) are other factors which affect hearing.

If hearing impairment of any degree is suspected because of any causal factors, prompt medical, audiological, and educational assessments are imperative in determining the immediate and long-range needs of the hearing impaired child.

Description of the Hearing Impaired Child

The behavior of the hearing impaired child is frequently described as follows: "Won't listen. Hears when he wants to. Can't talk plainly. Shy; backward; withdrawn; timid; a bully; talks loud; day dreams; seems to favor one ear over another; slow; never finishes work; non-cooperative on the schoolgrounds. Can see if he watches me work; is careless; lazy, poor reader; mixed up, incomplete sentences in written composition and oral expression, unusually attentive, or unusually bored. It should be remembered that these descriptions are only symptomatic indicators of behavioral differences. If hearing loss is suspected, referrals should be made to the appropriate specialist.

Informal Criteria for Identifying Hearing Problems

Any of the following symptoms may result from other kinds of deficits singularly or in combination with hearing impairment. Their presence, however, ought to be considered as sufficient cause for an auditory assessment:

(1) If the child has a history of respiratory infections, including ear trouble.
(2) If he favors one ear over another in locating the source of sound.
(3) If he begins to slur and/or omit consonant sounds
(4) If he is constantly watching the face of the speaker.
(5) If he does not pay attention to the activities of the class.
(6) If his oral and written communication becomes disconnected, confused, mixed up.
(7) If there is a noticeable change in voice quality; if the child ceases to talk very much and increases in unusual use of gestures in communication.

Characteristics

The hearing impaired child is generally more like his hearing peers than unlike them. If an auditory deficit is the only disorder, the child may be average or normal in height, weight, neural-motor functions, and intelligence. His potential capacity and ability--intelligence, language fluency, psychological, social and emotional stability--when compared with his actual functioning may range from age-level expectancy and performance and above, to a 2-to-7 year deficit, depending on his physiological condition and the adequacy of his environment.

Implications of Hearing Impairment and Educational Needs

Classification of Hearing Loss (ISO Reference)	Effect of Hearing Loss on Speech and Language	Prognosis of Educational Needs
SLIGHT LOSS (27-40 db)	May have difficulty hearing faint sounds. Will experience no inconvenience generally in school situations. Will probably have no defective speech as a result of hearing loss.	Regular class involvement; favorable seating and lighting desirable. May benefit from hearing aid. Vocabulary building highly desirable in meaningful context of school subjects.
MILD LOSS (Marginal) (41-55 db)	Understands conversational speech at a distance of 3-5 feet (face to face). May miss as much as 50% of class discussions if voices are faint or speaker's face is not visible. May show limited vocabulary and some speech differences if loss is in high frequencies.	Careful educational planning implementation and follow-up is essential in the regular classroom. Speech-reading helpful; use individual hearing aid. Speech training and vocabulary development helpful; speech assistance and conversation needed.
MODERATE LOSS (marked) (56070 db)	Conversation must be loud (understanding at a distance of 3 feet). May not understand what is said in group discussions. May have defective speech if child has high frequency loss (s, z, sh, ch, j, substitution of t and d for k & g, etc.). May have difficulty in language expression. Limited vocabulary.	Needs meaningful social experience with peers and teachers. Needs hearing aid, auditory training, special assistance in language and speech, vocabulary development, speech-reading, reading, writing, etc. Favorable seating; may need special class assignment if hearing clinicians, academic tutors and/or other support personnel are not available.

SEVERE LOSS (71-90 db)	May hear voice at several inches from the ear. Hears loud noises at some distance horns, airplanes, dogs barking. Speech and language does not develop spontaneously. Voice may or may not have good quality. May discriminate between vowels but not consonants at close range. Without constant language and speech experience, there may be deterioration. Voice may sound different.	Speech, language, auditory training; use of hearing aid. Speech reading, reading, writing, speaking are essential. Constant stimulation by peers and family in educational and social settings; may need special educational experience with trained teacher of the deaf if not well integrated in public school. Selection must be made carefully at all levels to assure the best educational opportunity. Family education and support essential and with help of resource personnel.
PROFOUND LOSS (extreme) (91 db or greater)	May hear loud shout one inch from ear. Responds to vibrations--loud noises. Speech and language does not develop spontaneously. Relies on vision rather than hearing for communication; without constant usage, speech and language may deteriorate. Voice may sound different. With new developments in the refinement of the hearing aid, and audiometric equipment, and meaningful use of residual hearing, many of these children are developing listening, thinking, and talking skills which are greatly expanding their intellectual, educational, and social horizons.	Child should have best educational, social opportunities available. Emphasis is on all language skills, auditory training, concept development, speechreading, speech, reading, and writing. Qualified teachers of the deaf are needed either in special class settings of as resource persons (sometimes called speech and hearing clinicians, academic tutors) to the regular classroom teacher. Continues appraisal of educational needs in regard to the most appropriate methods of communication must be made. Constant association with hearing peers and family in social and community settings are invaluable.

References: State of Utah

University of Utah
Department of Special Education
218A MBH
Salt Lake City, Utah 84112
Phone: 581-8442

Utah School for the Deaf
846 20th Street
Ogden, Utah 84401
Phone: (Ogden) 399-5635 (Salt Lake) 364-6181

Utah State Board of Education
Special Education
136 University Club Building
Salt Lake City, Utah
Phone: 328-5982

Utah State Board of Health
Speech and Audiology
44 Medical Drive
Salt Lake City, Utah
Phone: 328-6175

Utah State University
Department of Communication Disorders
Logan, Utah
Phone: 752-4100

Brigham Young University
Department of Communication Disorders
Provo, Utah 84601
Phone: 374-1211

Special Projects

Project NEED (Facilitating the Integration of Hearing Impaired Children into Regular Public School Classes)
Department of Special Education
RM 218A MBH
University of Utah
Salt Lake City, Utah 84112
Phone: 581-8442 or 581-8460

Project NEED (Facilitating the Integration of Hearing Impaired Children into Regular Classrooms) is entering its third and final year (funded by BEH). During this year (1973-74), the major concentration of the project staff is the production of the intervention material to be in the form of sound filmstrips and pamphlets. This material is to be aimed at helping the regular classroom teacher prepare for the hearing impaired child in the regular classroom. This training package, or Systems O.N.E., (orientation to the normal environment) will first be produced in prototype form, field-tested, revised, and produced in its final form. In addition to producing this package for use, Project NEED is revising A Review of the Literature Pertaining to the Integration of Exceptional Children into Regular School Classrooms for dissemination. An additional printing of Integration of the Hearing Impaired: Educational Issues made this report available to interested persons throughout the United States.

Project SKI-HI (Early Identification, Parent Home Project)
Utah School for the Deaf
846 20th Street
Ogden, Utah 84401
Phone: 399-2702

THE VISUALLY HANDICAPPED CHILD

by Ruth H. Craig, M.A.

Legal Definition

The term "visually handicapped" is applied to individuals with a wide range of visual disability, from total blindness to a much less severe limitation. A person is "legally blind" (sufficiently disabled to be entitled to certain legal allowances) if his visual acuity as measured on the Snellen chart is 20/200 or less in the better eye, with the best possible corrective lenses. This means that, at best, he can see from a distance of twenty feet what the person with "normal" vision can see from two hundred feet. An individual also qualifies as legally blind if his field of vision is severely restricted, even though what vision he has is better than 20/200. With "pinhole" or "tunnel" vision, for example, an individual can see objects only when they are directly in front of him, and may be able to read only a word or two with each fixation of his eyes.

A person is usually considered "partially seeing" if his vision is between 20/70 and 20/200. Children have traditionally been assigned to special classes or to the case load of the itinerant or resource vision specialist if their vision falls within this range. If vision is known to be deteriorating, or if there are other complicating factors such as chronic illness--diabetes, for example--a child may be included in a special education program for the partially seeing when his vision is still 20/60.

Practical Definition

For many years ophthalmologists felt that all children who were legally blind should learn to read braille, for fear of damaging the residual vision if print reading were attempted. Research into the effects of the use of the eyes in cases of very low vision has completely reversed medical opinion on this point. Doctors now feel strongly that no damage is done to eyes with low vision by using them for reading or any other near vision tasks, and that *legally blind children who can possibly learn to read print should do so*. Near vision tasks may cause fatigue more quickly in such cases than when vision is normal, and periods of rest from close work should be encouraged, but use of the eyes should not be restricted except under doctor's orders in rare cases, even if the individual must hold a book at the end of his nose in order to read it.

When this advice is followed, many legally blind children become print readers, sometimes with the aid of large print books or with magnifiers of different types prescribed for them by a Low Vision Aid Clinic such as the one operated in connection with Utah State Services for the Visually Handicapped in Salt Lake City. These children then fit the educational definition of the partially seeing child: one who has a visual limitation severe enough that he needs some special materials and some special teaching procedures, but whose chief avenue of learning is vision. For educational purposes, only the child who must use braille as his reading medium is considered "blind."

Over a period of years the pattern of causes of blindness changes. Medical control of infectious diseases has greatly reduced the incidence of visual impairment caused by them, but they must still be included in any listing of etiology. Accidents, many of them preventable, continue to be an important cause of visual disability at all age levels. Many cases of impairment, especially in infants, must still be listed "cause unknown." Hereditary conditions are responsible for an appreciable number of cases of blindness. One of these is retinitis pigmentosa, which, while inherited, usually only begins to affect vision in the teen or young-adult years, and then progressively robs the individual of his sight, leaving him ultimately with little or none. (Adjustment problems of a high school student with this condition can be severe.)

Congenital cataract is another cause of blindness in school children, and also congenital glaucoma, both less responsive to medical intervention in children than when they develop in middleaged or elderly adults.

Diabetes plays an increasingly significant role among the causes of visual disability, and is expected to be the greatest single cause in this country within a very short time. It occurs primarily among adults and the aged, however.

Birth defects, including those caused by maternal rubella (German measles during the early months of pregnancy) account for most of the cases in infants of multiple defects including blindness. The development of a rubella vaccine will certainly reduce the incidence of visual impairment from this disease.

Informal Methods for Identifying the Visually Impaired Child

It is important for the teacher of a visually handicapped child who has some useful vision to realize that there are many different types, as well as degrees, of residual vision, and that these will effect the child's reading of books and the chalkboard, and his response to all visual tasks. Some children have the "pinhole" vision already mentioned. Some have no central vision and register visual sensations only on the periphery of the visual field, which never provides clear images. Some have general dimness of vision from cataracts, others have patches of more or less clear vision among irregular blind spots. If a child tilts and turns his head when looking at objects, he may be trying to find a clear spot on which to focus the image. The observant teacher may notice such mannerisms and realize that a child has a visual problem even before his disability has been detected through formal vision screening.

Other behaviors and symptoms which might lead parents or teachers to suspect poor vision include habitually swollen, red-rimmed or crusted eyelids, bloodshot or watery eyes, frequen sties; headache, dizziness or nausea following close visual work; complaints of double vision or burning eyes. It must be remembered that the partially seeing young child does not know how other individuals see and may have no idea that his own vision is subnormal. Frequent stumbling over low objects, difficulty in estimating distances as shown in game situations, or inability to distinguish colors may alert adults to such a child's visual limitation. The myopic (near-sighted) child often avoids ball games because he cannot see the ball coming in time to catch or hit it, and prefers quiet, perhaps solitary activities, often reading. The severely hyperopic (far-sighted) child, fortunately relatively rare, may become restless after periods of close eye work, and is sometimes identified by this characteristic.

Formal Vision Screening

Every school district should provide a careful vision screening of all school children every year, and should encourage the screening of pre-school children so that correctable visual defects are discovered and remedied before children enter school. Instructions for accurate administration of screening tests and assistance with establishing a screening program may be obtained from the National Society for Prevention of Blindness or a state affiliate such as the Utah Society for Prevention of Blindness. After screening, good follow-up procedures must be implemented.

Characteristics

There are no specific behavioral, physical or intellectual characteristics that may be said to be inherently associated with blindness or visual disability. Social problems, delayed physical development, emotional difficulties and even apparent mental retardation may arise from lack of stimulation in the home environment, from restrictions placed on activity by fearful parents, from the attitude of sighted neighbors, peers and associates toward the blind child; but none of these, in the absence of discrete additional impairments, should be considered essential characteristics of a blind child. The range of intelligence in blind children has been found to be very close to the normal curve, perhaps a little heavy on the low end of the scale. Early support and assistance to parents, and education to change the attitude of the general public toward blindness can greatly reduce the incidence of most of the undesirable traits sometimes associated with blindness or low vision.

The true limitations which poor vision imposes lie in the reduction of sensory input to the cerebral cortex and the resulting difficulty in forming accurate mental concepts, and in interference with freedom of mobility. Parents and educators must help the child to learn through senses other than vision, or, in the case of the partially seeing child, in addition to vision, providing auditory, tactile, kinesthetic, olfactory and gustatory experiences in the home and school. Independence in moving about, if encouraged early, will lead in later years to effective travel with a cane or guide dog or one of the electronic devices now being developed.

The intelligent visually handicapped child does not need changes in his school curriculum so much as changes in the materials with which he works: braille or large print books and writing materials, supplementary lighting where needed, tactile maps and diagrams, records and tapes for auditory work. Many of these special materials are supplied without cost through the federally funded quota system of the American Printing House for the Blind or through the regional branch of the Library of Congress, Division for the Blind and Physically Handicapped. The library which serves all of the intermountain states is located in Salt Lake City at 2150 South 300 West, Suite #16.

The functional potential of a blind individual without additional handicaps is usually limited primarily by the attitudes of society toward him rather than by his impairment. Job opportunities are often restricted because of lack of adequate vocational training centers and refusal of employers to consider hiring a blind worker. There are many vocational and professional fields in which a blind individual can function successfully, and his interpersonal relations and social potential are not necessarily limited because his vision is. If other impairments do exist, the individual's functional capacities must be assessed after careful diagnosis of all handicapping conditions and consideration of all remaining capabilities.

Recommended Resources for Additional Information

A book and two pamphlets which should be helpful to the regular classroom teacher who has a visually handicapped child in her class are:

> Teaching the Visually Limited Child, by Virginia E. Bishop, published by Charles C. Thomas, Springfield, Illinois.
>
> "The Visually Handicapped Child at Home and School," by John Walker Jones, Bureau of Education for the Handicapped, published by the U.S. Department of Health, Education and Welfare, Superintendent of Documents, U.S. Government Printing Office, Washington, D.C.
>
> "Handbook for Teachers of the Visually Handicapped," by Grace D. Napier and Mel W. Weishahn, second printing provided and distributed by the Instructional Materials Reference Center for Visually Handicapped Children, American Printing House for the Blind, 1839 Frankfort Avenue, Louisville, Kentucky.

In Utah, assistance to parents and educators of visually impaired children may be obtained by writing:

> Consultant for Programs for the Visually Impaired, State Department of Public Instruction, 1050 Univsersity Club Building, 136 East South Temple, Salt Lake City, Utah.

This source will refer the client to other resources--state, regional, national and private--for all types of services and additional information.

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SPEECH AND HARD OF HEARING

by Mae Taylor

Speech and language rehabilitation is provided for those students in the public schools whose speech or language is so far below standard or is so far from acceptable normal speech or language that it calls undersirable attention to itself or impedes educational or social efficiency.

Rehabilitative help is provided those students whose hearing loss is not severe enough to require program placement in a class for the deaf but who need the additional help of an itinerant or resource teacher to help them succeed in a regular classroom. Except for a moderate to a sometimes severe hearing loss, the child is otherwise generally mentally and physically adequate.

Speech and hearing handicaps may take the form of various behavioral manifestations:

1. Articulation Difficulty: the defective pronunciation of specific sounds within the language (example: R, L. S, TH sounds). Such defective articulation may have a variety of causes:

(1) Poor speech model for the child to imitate either in the home, play, or school setting.
(2) Reduced motor control of the tongue due to motor damage (cerebral palsy and other congenital motor problems or to a partial paralysis caused by accident or surgery).
(3) A hearing problem, either perceptive or receptive, which may cause the child to hear the sounds of speech inaccurately and therefore he reproduces them inaccurately.
(4) Delayed physical, social, mental, or emotional development associated with the child's overall growth pattern.
(5) Poor discrimination ability, thereby resulting in the child's inability to be aware of articulatory inaccuracies. This, therefore, hinders his ability to monitor his own speech with accuracy.
(6) Poor auditory memory. Inability to retain auditorially the sounds of speech which results in inability to reproduce them correctly with consistency.

(7) Other physical abnormalities. Such physical problems as tongue-tie wherein the tip of the tongue is tightly attached to the bottom of the mouth. Although rarely a severely handicapping condition, it can cause articulatory deficiency.

(8) Dental malocclusions may cause articulation deficiency since these cause a misplacement of the articulators required in the accurate production of a specific sound. "Articulators" refers primarily to tongue, teeth, palate and lips.

2. Speech and language problems associated with hearing loss: Since the correct production of sounds of our speech is a learned ability, and is primarily dependent upon imitation, it can be seen that the child who is deaf or severely hard of hearing will likely have severe speech and language deviations. Each separate sound of speech must be taught individually and the grammer, syntax, vocabulary, and mulitple definitions within our language must be taught separately and individually. Usually speech is more severely impaired as the severity of hearing loss increases. The hearing impaired child needs consistent help from a hearing person acting as a monitor, so that he may continually maintain the quality of speech production as well as upgrade the quality of articulation.

3. Language deficiency: A deficiency in the communication process, which may involve speaking, writing, listening and/or thinking. Such deficiencies may reflect 1) an inability to understand or handle the grammatic structure of our language; 2) a reduced vocabulary understanding and/or output; 3) association of auditory symbols, or the inability to relate spoken words in a meaningful way so that a spoken message is understood; 4) deficiency in verbal expression or an inability to express ideas verbally.

4. Speech problems associated with emotional problems: The most notable speech problem with a primary emotional base is that of stuttering. Stuttering consists of repetitions, hesitations, and prolongations in speech. If the child does not seem to be aware of his speech and exhibits no anxiety or physical struggle, then his stuttering is said to be "primary" and treatment is not generally recommended, especially at an early age. However, stuttering becomes "secondary" when the speaker evidences awareness of his nonfluencies and reacts to them by attempting to modify, avoid, or "hide" them. Theories as to the cause of stuttering vary. Generally, it is considered to have an emotional base which might be related to problems in relationships with family, peers, or others. Other theories offer various "causes." Stuttering is usually considered to be a symptom of a problem rather than a problem in and of itself.

There is a higher correlation between speech and language difficulties occurring in children who have other exceptionalities than is generally found in the "normal" school population. Children with physical handicaps, mental handicaps, or emotional handicaps will show a higher percentage of communication disorders. Many educable mentally retarded children need special speech and/or language help and most trainable mentally retarded children will need a great deal of help particularly in developing language skills.

The learning disability child shows a higher than average percentage of speech and hearing deficiencies. Ofttimes the speech-language difficulty is related to a specific learning disability as may well be the case with the specific disabilities of auditory association, auditory reception, verbal expression, grammatic closure, auditory memory, auditory closure and sound blending.

Within the public school setting the speech, language, or hearing handicapped child is often identified and referred for treatment by the classroom teacher--primarily when his communicative ability with the classroom teacher or peers is either unintelligible, unpleasant, or interferes with educational efficiency. The classroom teacher may notice that the child's classmates tease him about his communication deficiency, or he may simply be difficult to understand. Upon referral of the child for evaluation by a qualified communication disorders specialist, the nature of the child's disorder, recommendations for treatment, placement in a special educational service pattern, or specific activities for the classroom teacher to use with the child, will be recommended by the communication disorders specialist. Occasionally a different kind of specialist in the education of the handicapped will be asked to diagnose the child to determine the existence of multiple handicaps, such as a co-existing learning disability, intellectual handicap, physical disability or emotional disturbance.

APPENDIX C

Formal Screening Instruments

The screening instruments briefly described in this section are those used in the basic work with children and teachers which underlies the information contained in this document. The list is not comprehensive, and no attempt was made to rank the instruments nor to pass judgment on their merit.

The instruments are listed under major headings for ease in quickly locating the information:

Section A.	Comprehensive Battery
Section B.	Language
Section C.	Mental Ability
Section D.	Performance
Section E.	Physical
Section F.	Social and Behavioral
Section G.	Speech and Hearing
Section H.	Vision

Section A: Comprehensive Battery

Communicative Evaluation Chart

R. Anderson, M. Miles, and P. Matheny
Educators Publishing Services, Inc.
75 Moulton, Cambridge, Mass.

For early detection of childhood communicative disabilities, for infancy to 5 years. Norms not established.

Early Detection Inventory

F.E. McGahan and C. McGahan
Follett Publishing Corp.
1010 W. Washington Blvd.
Chicago, Illinois

Individual screening device for pre-school children--social, emotional, physical, intellectual. The readiness section must be administered by a professional.

Pupil Rating Scale: Screening for Learning Disabilities

Helmer Myklebust
Grune & Stratton, Inc.
757 3rd Ave.
New York, N.Y. 10017

This is a screening and diagnosis for auditory comprehension of spoken language, non-verbal orientation, motor coordination, personal-social behavior. Designed for children between 4 and 8 and retarded children of all ages.

Section B: Language

Screening Test for Identifying Children with Specific Language Disability, Revised Edition

Beth H. Slingerland
Educators Publishing Service, Inc.
75 Moulton
Cambridge, Mass.

Tests visual copying from far point, visual copying from near point, visual perception-memory discrimination with kinesthetic memory, auditory recall, auditory perception of beginning and ending sounds, auditory associations. This test is complex in organization; therefore, administration and scoring require considerable study by the examiner before it can be used successfully. Norms should be set by examiner according to the locale it is administered in.
Time: 6 minutes in 2 or 3 sessions.

Utah Test of Language Development

Jex and Jones
Communication Research Associates
Salt Lake City, Utah

Developmental expectancies are given up to age eight.

Section C: Mental Ability

Otis-Lennon Mental Ability Test

Arthur S. Otis, Roger T. Lennon
Harcourt Brace Jovanovich, Inc.
757 3rd Ave.
New York, N.Y. 10017

Provides for the assessment of general mental ability or scholastic aptitude, by sampling a broad range of cognitive abilities. Forms: Primary I (last half of kindergarten) 30 minutes; Primary II (first half of grade 1) 30 minutes; Elementary I (1.6-3.9) 45 minutes; Elementary II (4.0-6.9) 40 minutes; Intermediate (7.0-9.9) 40 minutes; advanced (10.0-12.9) 40 minutes. Hand scored or machine scored.

Slosson Intelligence Test for Children and Adults

Richard L. Slosson
Slosson Educational Publications, Inc.
140 Pine St.
East Aurora, N.Y. 14052

This is an individual test requiring no specific training for the administrator. It is a series of questions involving general intelligence. Administration and scoring instructions are in the test booklet. Time: 10-15 minutes.

Section D: Performance

ABC Inventory

N. Adair and G. Blesch
Research Concepts, a Division of Test Maker, Inc.
1368 E. Airport Rd.
Muskegon, Michigan 49444

The ABC Inventory is designed to identify children aged four to six who are likely to fail in kindergarten or who are not likely to be ready for grade one. Items relate to drawing, copying, folding, counting, memory, general information, colors, size concepts, time concepts, and the like. The

Inventory is individually administered, paced, and takes about 9 minutes time. No special training is needed to administer the questionnaire. Raw scores are related to "ready ages," which are highly correlated with mental ages (Stanford-Binet).

Assessment Program of Early Learning Levels (Apell)

E.V. Cochran and J.L. Shannon
Edcodyne Corporation
I City Blvd. West Suite 935
Orange, California 92668

The APELL indicates deficiencies in the areas of language skills, pre-reading, and pre-mathematics in children from four and one-half to seven years old. It may be used with younger children if it is individually administered. Visual discrimination, auditory association, letter names, discrimination of attributes, number concepts, number facts, nouns, pronouns, verbs, adjectives, plurals, and prepositions are included. The test is paced, requires about 40 minutes to administer and should be given in two 20-minute sessions on consecutive days. No training is necessary to administer the test. Examinees answer questions by selecting one of three pictures. The test is machine scored.

Basic Concept Inventory

S.E. Engleman
Follett Education Corporation
Follett Publishing Corporation
1010 W. Washington Blvd.
Chicago, Illinois 60611

The Basic Concept Inventory provides a broad checklist of basic concepts that are involved in new learning situations and are used in explanations and instructions in the first grade. It is primarily intended for culturally disadvantaged pre-school and kindergarten children, slow learners, emotionally disturbed and mentally retarded children. The Inventory may be given to children aged three to ten. The Inventory is criterion-referenced and uses basic concepts, sentence repetition and comprehension, and pattern-awareness tasks. It is individually administered, paced, and requires about 20 minutes. If the Inventory is to be used as a basis for remedial instruction, it may be given by the classroom teacher. If, however, it is to be used diagnostically as the basis for special treatment of special placement, a trained examiner should administer the instrument.

Bayley Scales of Infant Development

N. Bayley
The Psychological Corporation
304 E. 45th St.
New York, N.Y. 10017

The Bayley Scales of Infant Development assess developmental status in infants from birth to thirty months of age. The Mental Scale (163 items) measures sensory-perceptual acuities and discriminations; early acquisition of object constancy and memory, learning, and problem-solving ability; vocalizations and the beginning of verbal communication; and early evidence of the ability for form generalizations and classifications. The Motor Scale (81 items) measures the degree of control of the body, coordination of the large muscles, and finer manipulatory skills of the hands and fingers. Each of the items has an age-placement to the nearest one-tenth of a month and an age-range. The last part of the test is an Infant Behavior Record, consisting of 30 ratings, which is completed by the examiner after the Scales have been administered on the basis of his observations. It deals with social orientation, emotional variables, object relations, motivational variables, activity, reactivity, sensory areas of interest displayed, and general evaluations. Some props are needed. A kit of the materials used for norming groups is available. The test is untimed (although certain items are timed) and individually administered. Training is needed. The mother (or mother substitute) is present during the test. Average testing time for the Mental and Motor Scales is 45 minutes with about ten percent of the cases requiring 75 minutes or more. Raw scores may be converted to Mental Development and Motor Development indices, scores standardized by age with a mean of 100 and standard deviation of 16, or to mental ages. Split-half, test retest, tester-observer reliabilities, and correlations with Stanford-Binet I.Qs for sample members aged 24 months, 27 months and 30 months are reported.

Boehm Test of Basic Concepts (BTBC)

A.E. Boehm
The Psychological Corporation
304 East 45th St.
New York, New York 10017

The Boehm Test of Basic Concepts measures master of concepts considered necessary for achievement in the first years of school. It is appropriate for Grades K-2. Pictorial, multiple-choice items check concepts of quantity of number, space (location, direction, orientation, dimension), time, and miscellaneous. BTBC is group-administered and paced. Administration time is 15-20 minutes for each of two test booklets. The test may be given in one or two sessions depending upon age and attention span. Testing in small groups (eight-twelve) or using assistants is helpful with younger children. No special training is needed to give the test. Percentile norms by grade and by socioeconomic level are available.

Communicative Evaluation Chart

R. Anderson, M. Miles, and P. Matheny
Educators Publishing Service, Inc.
75 Moulton
Cambridge, Mass.

The Communicative Evaluation Chart for children from infancy to five-years old, is a screening device that gives an impression of the child's overall abilities. From 12 to 25 items are given for the ages three months, six months, nine months, and one year. Half the items deal with the development and comprehension of language as a communicative tool, while the other half deal with physical growth and development, motor coordination, and visual-motor responses; some items can be reported while others require a response of the child. This is essentially a checklist of items categorized by age. Norms are based on other tests.

Denver Developmental Screening Test

W. Frankenburg and J.B. Dodds
Ladoca Project and Publishing Foundation, Inc.
E. 51st Ave. & Lincoln St.
Denver, Colorado 80216

The Denver Developmental Screening Test is a simple, clinically useful tool designed to assist in the early detection of children with serious developmental delays. It may be used with children from age two weeks to six years. The purpose is screening, not diagnosis. Although the test contains 105 tasks, a child of any given age will usually be tested on about 20 items. The DDST evaluates the following areas: gross motor, fine-motor-adaptive (use of hands, ability to solve nonverbal problems), language (ability to hear and talk), and personal-social (tasks of self-care, ability to relate to others). The test is individually administered and paced. No special training is needed. Testing materials include a rattle, pencil, box of raisins, bell, tennis ball, glass bottle, some blocks, some yarn. Task norms which indicate the age at which 25%, 50%, 75%, and 90% of boys, girls, and all children successfully complete each item are available.

Early Detection Inventory

F.E. McGahan and C. McGahan
Follett Publishing Corp.
1010 W. Washington Blvd.
Chicago, Illinois 60601

For information see Section A.

Evanston Early Identification Scale

M. Landsman and H. Dillard
Follett Educational Corp.
1010 W. Washington Blvd.
Chicago, Illinois 60601

The Evanston Early Identification Scale is a simple screening device for identifying children who can be expected to have difficulty in school. It consists of one task, that of drawing a person. It was conceptualized from observations that children in the upper elementary grades who were having serious learning problems had performed poorly on kindergarten figure drawings. A 25 point scale was developed, based on the absence of figure drawing details and on correct position of body parts. The test is suitable for children aged five years, zero months to six years, three months. The children should previously have had a chance to become familiar with drawing materials.

Gilmore Oral Reading Test

John V. Gilmore
Harcourt, Brace & Jovanovich
757 3rd Ave.
New York, N.Y. 10017

An individual test that measures three aspects of oral reading ability: accuracy, comprehension, and rate. Administration and scoring are included in the Manual of Directions. Grade equivalents are given for accuracy and comprehension. Time: 15-20 minutes.

Keystone Ready-to-Read Test

Keystone View Company
Meadville, Pennsylvania 16335

This test is for school-entrance-aged children. It tests visual readiness to read books at the usual distance. Near-point fusion, lateral and vertical posture and usable vision are tested. Pass-fail scores are the only options for scoring.

Kindergarten Evaluation of Learning Potential

Wilson, J.A.R., and Roebeck, M.C.
Webster Division, McGraw Book Company
8171 Redwood Highway
Novato, California 94947

The Kindergarten Evaluation of Learning Potential predicts school success in the early grades based on the child's actual learning in kindergarten. It is designed as both a teaching and evaluation instrument. KELP items include skipping, color identification, bead design, bolt board, block design, calendar, number boards, safety signs, writing a name, auditory perception, and social interaction. The latter nine items are rated at three levels: association, concept formation, and creative self-expression. The items are taught by the teacher, who observes and records the accomplishment of the tasks over the entire kindergarten year. Classroom materials, teaching tips, and a summary retention test are available. The authors report that stanine norms can be obtained on request.

Metropolitan Achievement Tests

W.N. Durost, H.H. Bixler, J.W. Wrighthouse, G.A. Prescott, I.H. Balow
Harcourt, Brace & Jovanovich
757 3rd Ave.
New York, N.Y. 10017

a) Primer-(grades k-1.4)

Tests listening for sounds, reading, numbers. Scoring and administration instructions included in manual. Time: 120 minutes in 8 sessions.

b) Primary I (grades 1.5-2.4)

Tests reading (word knowledge, reading, total) word analysis, mathematics. Scoring and administration same as above. Time: 115-125 minutes in 3 or 4 sessions.

c) Primary 2 (2.5-3.4)

Tests reading (word knowledge, reading, total) analysis, spelling, mathematics (computation, concepts, problem-solving, total). Administration and scoring same as above. Time: 160-170 minutes in 5 sessions.

d) Elementary (3.5-4.9)

Tests reading (word knowledge, reading, total), language, spelling, mathematics (computation, concepts, problem-solving, total). Time: 225-235 minutes in 7 sessions.

e) Intermediate (5.0-6.0)

Tests reading (word knowledge, reading, oral), language, spelling, mathematics (computation, concepts, problem-solving and total), science, social studies. Administration and scoring same as above. Time: 310-320 minutes in 6 sessions.

f) Advanced (7.0-9.5)

Tests same areas as Intermediate. Scoring and administration same as above. Time: 305-315 minutes in 6 sessions.

Peabody Picture Vocabulary Test

L.M. Dunn
American Guidance Service, Inc.
Publisher's Building
Circle Pines, Minn. 55014

The PPVT is assumed to measure recognition (hearing) vocabulary by having a child identify correct pictorial representations (from among four alternatives) in a series as the examiner speaks a word corresponding to each picture. It was originally designed to predict school success and results obtained from its use are often taken to roughly estimate a child's "verbal intelligence." Items are arranged from simple to complex. This test is suitable for use with children of pre-school age and beyond and is easily administered. Further, the PPVT requires little in the way of special training for scoring and interpretation. It appears that the test is more effective with children beyond age seven than with those of nursery and kindergarten age. Extensive use has been made of the PPVT for the study of mentally retarded children.

Screening Tests for Identifying Children with Specific Language Disability, Revised Edition

Beth H. Slingerland
Educators Publishing Service, Inc.
75 Moulton
Cambridge, Mass.

For information see Section B.

Silveroli Reading Inventory

Nicholas J. Silveroli
William C. Brown Company
135 South Locust Street
Dubuque, Iowa 52001

This test is administered informally on a one-to-one basis. There are 3 forms: Form A and B go to grade 6 reading level, Form C goes to grade 8. The test consists of graded word list and oral paragraph with comprehension questions. Scores give independant, instructional and frustration reading levels. A graded Spelling Survey is also included. Time: 15-20 minutes.

Stanford Achievement Test

T.L. Kelly, R. Madden, F.F. Gardner, H.S. Reedman
Harcourt, Brace & Jovanovich
757 3rd Avenue
New York, N.Y. 10017

a) Primary I Battery (grades 1.5-2.4)

Tests word reading paragraph meaning, vocabulary, spelling, word study skills, and arithmetic. Administration and scoring instructions included in the manual. Time: 2 hours, 40 minutes.

b) Primary II Battery (grades 2.5-3.9)

Tests word meaning, science, and social studies concepts, spelling, word study skills, language, arithmetic computation, and arithmetic concepts, administration and scoring same as above. Time: 3 hours, 50 minutes.

c) Intermediate I Battery (grades 4.0-5.4)

Tests word meaning, paragraph meaning, spelling, word study skills, language, arithmetic computation, arithmetic concepts, arithmetic applications, social studies, and science. Administration and scoring same as above. Time: 5 hours.

d) Intermediate II Battery (grades 5.5-6.9)

Tests word meaning, paragraph meaning, spelling, language, arithmetic computation, arithmetic concepts. Administration and scoring same as above.

e) Advanced Battery (grades 7.0-9.9)

Tests paragraph meaning, spelling, language, arithmetic computation, arithmetic concepts, arithmetic application, social studies and science. Administration and scoring same as above. Time: 4 hours, 45 minutes.

f) High School Battery (grades 9-12)

/

Tests English, numerical competence, mathematics, reading, science, social studies, and spelling. Supplementary tests available are: Arts and Humanities, Business and Economics, and Technical Comprehension. Administration and scoring same as above. Time for Basic Battery: 5 hours, 20 minutes.

Many subtests listed above are also available separately.

Wide Range Achievement Test

Jastak, J.F. and Jastak, S.R.
The Psychological Corporation
304 E. 45th St.
New York, N.Y. 10017

The Wide Range Achievement Test measures achievement in reading, spelling, and arithmetic from preschool through adulthood. Age norms are given for ages five and up. Scores are given in grade equivalents, standard scores, and percentiles. The reading subtest consists of recognizing and naming letters and naming words. The spelling subtest consists of copying marks resembling letters, writing the name, and writing words to dictation. The arithmetic subtest involves counting, reading, number symbols, solving oral problems, and performing written computations. The three subtests take twenty to thirty minutes.

Section E: Physical

ABC Inventory

N. Adair and Blesch
Research Concepts, A Division of Test Makers, Inc.
1368 E. Airport Rd.
Muskegon, Michigan 49444

For information see Section D.

A Movigenic Curriculum

Ray Barsch
State Department of Public Instruction
Madison, Wisconsin

This is a very informal test based on Barsch 12 dimensions of motor-task analysis. Several tasks are to be done for each dimension; each successive task dependent upon the one before. The general areas covered are: Postural-Transport Orientation, Percepto-cognitive modes, and degrees in freedom. Scoring is by teacher observation. Time: 1 hour.

Communication Evaluation Chart

R. Anderson, M. Miles, and P. Matheny
Educators Publishing Service, Inc.
75 Moulton
Cambridge, Mass.

For information see Section B.

Denver Developmental Screening Test

W. Frankenburg and J.B. Dodds
Ladoca Project and Publishing Foundations, Inc.
E. 51st Ave. and Lincoln St.
Denver, Colorado 80216

For information see Section D.

Early Detection Inventory

F.E. McGahan and C. McGahan
Follett Educational Corp.
Follett Publishing Corp.
1010 W. Washington Blvd.
Chicago, Illinois

For information see Section A.

Valett Developmental Survey of Basic Learning Abilities

R.E. Valett
Consulting Psychologists Press
Palo Alto, California

The Valett Developmental Survey evaluates various developmental abilities of children between the ages of two and seven, to aid in planning individualized learning programs. It consists of 233 tasks in the areas of motor integration and physical development (seventeen items), tactile discrimination (eleven items), auditory discrimination (thirty-six items), visual-motor coordination (nineteen items), visual discrimination (fifty-three items), language development and verbal fluency (thirty items), and conceptual development (sixty-seven items). The Survey is individually administered and paced. Some practice is needed to give the test. Many props, all inexpensive and readily available, are needed. The author considers the Survey incomplete by itself and recommends that it be supplemented with measures of family background, prior learning experiences, and subjective estimates of the child's motivation for learning, social judgment, interests, general adaptivity, and common sense. Age norms for each of the tasks are included.

Devereux Child Behavior Rating Scale

George Spivack and Jules Spotts
Deuereux Foundation Press
Devon, Pa. 19333

This scale is a comparative instrument that considers the child's behavior over a two-week period. Seventeen behavior factors are evaluated. Raw scores and standard score units are calculated.

Early Detection Inventory

F.E. McGahan and C. McGahan
Follett Educational Corporation
Follett Publishing Corp.
1010 W. Washington Blvd.
Chicago, Illinois 60607

The Early Detection Inventory measures general school readiness in preschool children. Areas of assessment are: social emotional behavior responses, readiness tasks (verbal self-awareness, concept development, awareness of left/right, awareness of body image), motor performance, vision, hearing, dental health, speech, medical history, and family and social history. Both the child and one of his parents are needed to complete the instrument. The Inventory is individually administered and paced. Administration time depends on the number of personnel assigned to the testing session. At least the following are needed: an experienced educational tester, a vision examiner, a hearing examiner, a dentist, and a speech therapist. Several readily available props are needed.

Levine-Elzey Pre-school Social Competency Scale

Stanford University Press
Stanford,
California 94305

This is a rating scale on 34 social competencies including relations with peers, communication skills, and emotional independence.

The Piers-Harris Children's Self Concept Scale (The Way I Feel About Myself

Ellen V. Piers, Dale B. Harris
Counselor Recordings and Tests
Box 6184
Acklen Station
Nashville, Tenn. 37212

For grade levels 3-12. The test consists of 80 first-person declarative statements, i.e., "I am a happy person." The child answers yes or no. One half are worded positively. Half are worded negatively. It can be administered to children below grade three if the examiner reads the statements. Administration and scoring procedures are included in the manual. Time: 15-20 minutes.

Vineland Social Maturity Scale

Edgar A. Doll
American Guidance Service, Inc.
Publishers Bldg.
Circle Pines, Minn. 55014

This test measures social competence in areas of: self-help general, self-help dressing, self-help eating, communication, self-direction. Socialization, locomotion and occupation. Age level is 0-30. Items are scored after interviewing someone well-acquainted with the subject or the subject himself. A social age is then obtained; this is divided by the chronological age, yielding a social quotient.

Section G: Speech and Hearing

Auditory Discrimination Test (Wepman)

J. Wepman
Language Research Associates
175 E. Delaware Place
Chicago, Illinois 60611

The Auditory Discrimination Test requires about five minutes to administer and presents matched words which the child is asked to indicate as being the same or different. Test results are interpreted in terms of either adequate or inadequate development of auditory discrimination, with cut-off points given, starting at age five. The test lacks the sophistication of the Coldman-Fristoe-Woodcock, but appears to be a simple and efficient instrument for limited purposes.

Early Detection Inventory

F.E. McGahan and C. McGahan
Follett Educational Corporation
Follett Publications Corp.
1010 W. Washington Blvd.
Chicago, Illinois

For information see Section A.

Peabody Picture Vocabulary Test

L.M. Dunn
American Guidance Service, Inc.
Publishers Bldg.
Circle Pines, Minn. 55014

For information see Section D.

Predictive Screening Test of Articulation

C. VanRiper and R.L. Erickson
Continuing Education Office
Western Michigan University
Kalamazoo, Michigan 49001

For grade 1 aged children. Used for identification of children unlikely to master normal articulation by the end of grade 2 without speech therapy. Individually administered. Scoring instructions included in manual. Time: 8 minutes.

Screening Test for Auditory Perception: Experimental Edition

Geraldine M. Kimmel and Jack Wahl
Academic Therapy Publications
1539 4th St.
San Rafael, Calif. 94901

For grade levels 2-6. Tests vowels, consonants, ryhyming words, sound patterns, word differences, total. No reading by examinees. Administered individually or to a group. Scored in percentile rankings - national norms. Scoring instructions included in manual. Time: 45 minutes.

Section H: Vision

Communicative Evaluation Chart

R. Anderson, M. Miles, and P. Matheny
Educators Publishing Service, Inc.
75 Moulton
Cambridge, Mass.

For information see Section E.

Early Detection Inventory

F.E. McGahan and C. McGahan
Follett Educational Corporation
Follett Publishing Company
1010 W. Washington Blvd.
Chicago, Illinois

For information see Section A.

Peabody Picture Vocabulary Test

L.M. Dunn
American Guidance Service
Publishers Building
Circle Pines, Minn. 55014

For information see Section G.

Screening Test for Identifying Children with Specific Language Disabilities, Revised Edition

Beth H. Slingerland
Educators Publishing Service, Inc.
75 Moulton St.
Cambridge, Mass.

For information see Section B.

Snellen Chart

Dr. Herman Snellen
(Available in physician supply firms)

This is used for measuring the visual acuity of children, by having them stand at a distance of 20 feet and read the successively smaller privated lines of Es. Scores give the visual efficiency of the student. Time: 5 minutes.

APPENDIX D

Formal Diagnostic Tests

Brief descriptions of a few formal diagnostic tests used (or requested) by the contributors are described here. Included is brief, general information about the types of scores obtained and their use in programming activities for identified children.

Durrell Analysis of Reading Difficulty
Gates-MacGinitie Reading Tests
Illinois Test of Psycholinguistic Abilities
Metropolitan Achievement Test
Slingerland Screening Tests for Identifying Children with Specific Language Disability
Slosson Intelligence Test
Weschler Intelligence Scale for Children
Wide Range Achievement Test

DURRELL ANALYSIS OF READING DIFFICULTY

Population: Grades K through 6; nonreaders to intermediate readers.

Administration: The Durrell is an individual diagnostic reading test. No special training is required but it is beneficial to study the test carefully and administer practice tests before using it with students. The timing and marking of errors are complex and require precision for the norms to be reliable. The Durrell takes 30 to 90 minutes to give, depending on the child's ability level. The manual, reading paragraphs booklet, individual record booklet, tachistoscope and a stop watch are necessary.

When to use: If screening measures or observations have indicated that a child has a reading problem, the Durrell can pinpoint where the problem lies. It is a diagnostic tool which can be the basis for prescriptive teaching.

General Description: The Durrell is divided into seven sections, each of which tests a specific reading skill. In addition, six optional tests are in the protocol but are not recorded on the profile. They are: letters, visual memory of words, hearing sounds in words, learning to hear sounds in words, sounds of letters and phonetic spelling. These six offer specific information about lack of skills in phonics.

In oral reading, the child reads paragraphs aloud while the examiner notes errors, according to a code. The reading is also timed. In silent reading, the examiner times the reading and asks questions after it is completed. Listening is used to indicate a child's potential reading level. The examiner reads a paragraph on the child's actual grade level, aloud, and asks the child questions about it. If the child can answer the questions about it. If the child can answer the questions, it is assumed that he is capable of reading on or above grade level.

Flashwords test sight vocabulary level, and word analysis checks phonetic skills. When giving the word analysis section, it is important to write the word as the child pronounced it rather than recording a minus. This facilitates analysis of error patterns.

Spelling and handwriting are not related directly to the reading process although the spelling test may offer some insight into each child's phonetic skills.

Types of Scores and Interpretation: A profile is completed on the front of the test booklet; it shows grade-level scores for each of the seven areas. This profile clearly shows deficits and strengths. A child may be strong in oral reading and very slow in silent reading, etc.

The Durrell lends itself to in-depth analysis. The oral reading errors can be tallied to show what the specific problems are (word-by-word reading, substitutions, ommissions, etc.). Silent reading comprehension and speed may be compared to see whether or not they are in proportion to one another. Of great importance is the word analysis test. Error patterns such as short vowels endings, or blends can be picked out. The six supplementary tests also offer specific information about which skills are present and which are lacking. Further testing may be necessary to make sure these error patterns are consistent, but the examiner should know about where to start instruction after giving the Durrell. (It should be kept in mind that the oral reading and silent reading grade scores are based on reading speed; they do not indicate error rates.)

GATES-MacGINITIE READING TESTS

Population: Grades K-12 not necessarily accurate for emotionally disturbed or slow but accurate workers.

Administration: The Gates-MacGinitie is a group test of silent reading ability. It may be administered by classroom teachers. No special training is required. Approximately 45-50 minutes are needed for administration but any number of students can take it at the same time. Scoring is quick and simple. Materials needed to administer the test include a test package for the appropriate grade level, and a stop watch or clock. The test package contains the technical manual, teacher's manual, scoring key, and class record sheet and test booklets. The examiner gives directions to the group and the children work silently until time is called.

When to Use: This test can be used for screening to pick up silent reading problems, in grouping for instruction, for determining approximate level for instruction, for determining approximate reading level of a class and for checking progress after instruction. It must be kept in mind, however, that the scores offer an estimate of silent reading level only. For more complete analysis, more testing is necessary after general problems are picked up in the Gates-MacGinitie.

General Description: The kindergarten level tests reading readiness skills. Vocabulary and comprehension sections are included for grades 1-12. The vocabulary section shows a picture and offers four possible labels for that picture. The child selects the best word. In comprehension, four pictures are provided for each question or statement and the child circles the best one. The questions become increasingly more difficult. Each child begins with item 1 and goes as far as he can before time is called. In grades 2-12 there are also forms available for speed and accuracy.

Types of Scoring and Interpretation: For each section, a standard score, percentile score, and grade score are determined. These are global scores. It is difficult to specifically determine error patterns except to identify children who work rapidly with many errors and those who work more slowly but accurately. Care must be taken not to try to interpret how well the child should read from this test; it provides only an indication of where the child is reading. Also, scores cannot be added to obtain averages nor subtracted to get different scores. Grade scores are not very useful for assessing a child's position relative to others in his grade as he moves through the grades.

ILLINOIS TEST OF PSYCHOLINGUISTIC ABILITY

Population: 2.5 to 10 years. Some subtests will not be valid for children with vision problems, hearing problems, mental retardation, etc.

Administration: Examiners must be thoroughly trained before administering the ITPA. Scoring and administration require expertise. Forty minutes to more than an hour is required for completion of the test; a kit containing needed materials must be obtained.

When to Use: When a child is having trouble with school work, it may be valuable to give him an ITPA, which provides a diagnostic evaluation of communication disorders. Deficits in learning channels may be identified, thus giving clues for remedial programs or for ascertaining the most efficient ways to teach a particular child. For instance, it may be found that the child learns best by auditory methods. Many remedial programs have been published for use in conjunction with the ITPA. The ITPA does not claim to offer information about etiology; evaluation will show what problems exist but not why they exist.

General Description:

The test kit includes all materials needed for administering 12 subtests, each of which tests a specific area within three dimensions of cognitive abilities:

1. Channels of communication: auditory, visual, manual motor and verbal channels;
2. Psycholinguistic processes: receptive (input), expressive (output) and integrative (memory and meaning);

3. Levels of organization: representational level (ability to use symbols in a meaningful way) and automatic level (ability to use non-symbolic tasks in an "automatic" way).

Subtests

1. Auditory reception: auditory input and discrimination;
2. Visual reception: visual input and discrimination, visual meaning;
3. Visual sequential memory;
4. Auditory association: abstract verbal ability;
5. Auditory sequential memory: digit span;
6. Visual association: ability to comprehend relationship between ideas presented visually;
7. Visual closure: ability to recognize whole objects from visually presented parts of those objects;
8. Verbal expression expressive conceptual: verbal ability;
9. Grammatic closure: automatic grammar habits;
10. Manual expression: nonverbal language;
11. Auditory closure: ability to supply missing sounds in words;
12. Sound blending: ability to blend sounds.

Types of Scores and Interpretation: The ITPA's scoring concepts are somewhat different from many tests. An age score is derived from each raw score; this represents a subject's psycholinguistic age for each subtest and is expressed, like chronological age, in years and months. It is the score which pinpoints ITPA-based learning and problem-solving strengths and weaknesses. Each age score should equal the subject's chronological age.

The scaled scores show how far a child strays from "average" by checking the child's scaled score against an "average" scaled score of 36. One can see which subtests are "abnormal" irrespective of chronological age.

A composite psycholinguistic age is also derived. This score represents the integration of the first ten subtest age scores and offers an overall psycholinguistic age. This age should also correspond to chronological age.

The mean scaled score is the average of the scaled scores on the first ten subtests. This critical score shows which subtest areas are weak and which are strong with respect to the individual's mean scaled score. A line is drawn straight across the profile even with the mean scaled score, then each subtest scaled score is plotted above or below this line. If the difference is six or less, the skill is in the normal range. A difference of seven to nine indicates borderline ability or disability and ten or more indicates a marked strength or weakness. In the case of weaknesses, a score of ten or more defines an area in which remediation is necessary.

In addition to checking a child's deficits and strengths with the above scoring measures, patterns of weakness and strengths can be picked up. Subtest scaled scores are checked against the mean scaled score. If, in each of the following cases, all the representative subtest scaled scores (and no others) are six or more points lower than the mean, certain disorders are suggested:

1. Reception: decoding or input disorder;
2. Expression: encoding or output disorder;
3. Memory: memory disorder;
4. Association: disorder in the "meaning" system;
5. Representational level (first 6 subtests): the subject is unable to use symbols in a meaningful way;
6. Automatic level (last six subtests): the subject is unable to automatically and correctly use learned language patterns;
7. Auditory channel (input, memory, association, output) or visual channel: auditory or visual learning channel deficiency;
8. No specific pattern to subtest strengths and weaknesses: in problem-solving difficulty with particular low subtests.

METROPOLITAN ACHIEVEMENT TEST

Population: Grades 1-12

Administration: Depending on the level administered, the test may take 1½ hours to 4 hours. Testing is divided into several sittings to avoid fatigue. No special training is required to administer the test but the manual should be reviewed carefully before the test is given. Any number of students can be tested at one time. The tests can be hand-scored or machine-scored.

When to Use: The Metropolitan measures the skills of mathematics, language, reading, science and social studies at five different levels. The test can be given to check a group's achievement level, to identify children who are having difficulty, and for ability grouping. The Metropolitan may be re-administered to check for progress or new deficits.

General Description: The emphasis is on factual knowledge, with a format of multiple choice and tests. The reading section includes paragraphs followed by questions to answer. In spelling, the child marks words "correct," "incorrect," or "don't know." Language skills, reading charts and graphs, arithmetic, social studies and science are also assessed in separate subtests. Each subtest is timed by the examiner; the children complete as many items as possible before time is called.

Types of Scores and Interpretation: The Metropolitan yields a standard score, percentile rank, stanine and grade equivalent. By studying the scores, the teacher can identify particular strengths and deficits for each student and can determine average skill levels for the group. Noting particular items missed by a class may also be advisable. In this way, specific problem areas can be identified and future programming arranged to teach the needed information.

SLINGERLAND SCREENING TESTS FOR IDENTIFYING CHILDREN WITH SPECIFIC LANGUAGE DISABILITY

Population: Grades 1 through 4

Administration: This test can be given to small groups or to individuals. Time for administration is approximately one hour. A kit is required which contains a manual, record sheets, cards, and wall charts.

When to Use: Early identification of language problems is important; probably many of the deficits picked up by the Slingerland would be discovered by careful observation of a child over a period of time. However, the Slingerland gives a complete overview of a child's difficulties with language so that remediation can begin immediately.

General Description: Many language-related skills are tested. Handwriting, spatial organization, and directionality are measured by having the children copy words and letters both from a distance and at close range. Reading and spelling levels are determined. Auditory tests are also available but would not necessarily be used with every pupil.

Types of Scores and Interpretation: Scores are taken from the number wrong including errors, self-corrections, and poor letter formations. Through this type of analysis, problem areas are pinpointed. Scoring is quite complex and often subjective, so normative data are not necessarily accurate. Remedial programs for specific deficits can be selected, however, and further diagnosis completed as needed.

SLOSSON INTELLIGENCE TEST

Population: Ages 1 month to adult.

Administration: This individual IQ test takes about 20 minutes to administer and score. A test protocol and testing manual are the only materials needed. No special training is necessary to be able to administer the test as instructions in the manual are explicit.

When to Use: The Slosson is widely used as a screening device for placement in special programs. It has been shown to correlate highly with the Stanford Binet. A low IQ score on this test is a signal for further testing to pinpoint specific difficulties.

General Description: A series of questions is asked by the test administrator. These range from observations of behavior expected to content and concepts appropriate to an adult. Generally, testing begins with a question about one-year below the subject's chronological age; a basal and ceiling item are established according to the number of errors. The test protocol is arranged to make scoring quite simple. It is possible to break the questions down into general categories such as analogies, definitions, arithmetic, thought problems, and factual knowledge, even though there are no specific subtests.

Types of Scores and Interpretation: Mental age and IQ scores are derived. These are global scores and cannot be separated into performance and verbal intelligence. It is possible, however, to informally analyze specific areas of weakness and strength by checking for specific patterns of error on certain types of questions.

WESCHLER INTELLIGENCE SCALE FOR CHILDREN

Population: Ages 5 through 15.

Administration: The WISC is an individual IQ test which may be administered only by a qualified psychologist. It usually takes at least one hour to administer and scoring and interpretation are quite complex.

When to Use: When in-depth analysis of a child's intelligence is needed, the WISC is very valuable. Because of the subtests, a great deal can be learned about how a child thinks; indications of mental retardation, learning disability and emotional disturbance can also be picked up in interpretation of scores. The WISC is often used in placement of children in special education programs.

General Description: The WISC is divided into 12 subtests, six performance.

Verbal

Information: general facts, usually dependent on formal education

Comprehension: judgment and common sense dependent on wide variety of practical experiences

Arithmetic: number and arithmetic ability

Similarities: an abstract verbal problem-solving ability

Vocabulary: a word and verbal knowledge

Digit Span: short term auditory sequential memory

Performance

Picture Completion: ability to visually identify details, and ability to separate essential from nonessential visual details

Picture Arrangement: social awareness, ability to think sequentially, ability to see human cause-and-effect relationships and ability to fit parts into a whole

Block Design: nonverbal, abstract, problem-solving ability, visual motor coordination and spatial relationships

Object Assembly: visual motor coordination, spatial relationships and ability to fit parts into a whole

Coding: visual motor coordination, manual dexterity and flexibility, and visual memory

Mazes: planning and anticipation ability and visual motor coordination.

For each of the subtests, the examiner presents problems of increasing difficulty until a ceiling is reached; the basal and ceiling scores are used in the scoring.

Types of Scores and Interpretation: Verbal IQ, performance IQ and full scale IQ scores are calculated. Interpretation is complex but offers a great deal of information. By studying high and low subtest scores, strengths and weaknesses can be pinpointed. Discrepancies between verbal and performance scores are significant. In addition, the examiner is encouraged to note personal observations during the testing situation, which may offer clues about personality and learning traits of the student. Although caution should be used in interpreting individual subtest scores alone, the relationships between subtest scores provide information on the child's deficiencies, how he may learn best, and his strengths.

WIDE RANGE ACHIEVEMENT TEST

Population: 5 to 11 years (Level 1); 12 to adult (Level 2)

Administration: No training is needed to give the WRAT. It is simple to administer and the training manual is explicit. The test takes 15-30 minutes to administer and score. An instructional manual, clock or stop watch, and test protocol are the only materials needed. The arithmetic section can be given to groups, but the reading and spelling must be administered individually.

When to Use: Screening for group placement is the main value of the WRAT. It serves as a signal for further testing in weak areas. The scores are very broad and the skills areas are limited. Reading tests only reading recognition, and arithmetic tests computation only.

General Description: There are three subtests: reading, spelling and arithmetic. The Level I test also includes reading and arithmetic readiness measures. The reading section consists of a list of words ranging from very simple to difficult. The child reads every word until he makes a certain number of consecutive errors. For spelling, the teacher dictates words for the child to write. These, too, increase in difficulty and the testing stops when the ceiling item is reached.

The arithmetic readiness section provides simple questions for the teacher to ask the child. This test is given to all children under seven and to those older children who are suspected of being severely retarded in math. The arithmetic computation is a timed test in which the child completes as many items as he can in 15 minutes.

Scores and Interpretation: Scores are in terms of grade equivalents in each of the areas, standard score and percentile scores.

Other than a general outlook as to where the child is functioning, there is little diagnostic value to the WRAT other than to alert the teacher that further testing is needed in weak areas.

APPENDIX E

Instructional Materials and Techniques

BEHAVIOR MODIFICATION

Behavior modification refers to a systematic arrangement of events in the environment which leads to a change in observable behavior. Its principles have always been effective, but are often used inconsistently or in a trial-and-error fashion. Eliminating some of the guesswork through systematic observation of behavior and application of consistent consequences can lead to a classroom that runs more smoothly with improved academic progress.

Many basic concepts have been given specific labels in behavior modification theory.

Reinforcement: Behavior is influenced by what happens immediately after it occurs. Behavior that is rewarded tends to increase; that which is not rewarded tends to decrease. The consequence of a specific behavior is termed reinforcement. It is the reinforcer that controls behavior.

Positive Reinforcement: Anything that tends to increase a certain behavior by making a person feel good or motivating him to do something is a positive reinforcer. A teacher establishing a behavior modification program must be alert to what reinforces a particular person as many individual differences will be found. One child may be thrilled with the teacher's praise while another may feel quite uneasy or even unconcerned when he hears he is doing well. Positive reinforcers for maladaptive behavior often are not discovered because inappropriate assumptions are made about what should be reinforcing. Since positive reinforcers for a particular child may not always be obvious, the following (Figure 1) may aid the teacher. After the child has completed the survey either orally or in written form, the teacher will probably find several ways to reinforce that child's behavior.

Punishment: Punishment refers to any consequence that reduces or weakens a behavior. Traditionally punishment has been used to put a stop to inappropriate behavior. Spankings, witholding of privileges, and so on, are well known to all. The behavior modification approach is positive rather than punishment-oriented. Except in cases where health and safety are threatened, other methods should be used to change maladaptive behavior. Although punishment often appears to be a quick method for stopping a problem, its effects cannot accurately be measured. It is impossible to determine the degree of emotional impact punishment may have on an individual. Since punishment tells a person what not to do but gives no clue as to what he should be doing, it has little instructional value.

Have student complete the following sentences.

1. My favorite thing to do at home is ______________________________.
2. During the summer, the thing I like to do best is __________________.
3. My favorite subject in school is ______________________________.
4. My favorite kind of candy is ______________________________.
5. I would work real hard at school if my teacher would let me __________.
6. If I had three wishes of special activities I could do at school they would be ______________________________.
7. My favorite TV program is ______________________________.
8. The thing I like to do best with my mother is ____________________.
9. The thing I like to do best with my father is ____________________.
10. The one gift I would like the most from my parent is _______________.
11. My favorite food is ______________________________.
12. On weekends I like to ______________________________.
13. The thing I like to do best with my friends is ___________________.
14. The games I like to play best with my friends is __________________.
15. I would make my teacher happier if I ___________________________.

List the reinforcers given above and have the student indicate the order of preference. Put a number beside each reinforcer which tells student's rank order. (Say, "Of all these things, which would you like most?)

______________________ ______________________

______________________ ______________________

______________________ ______________________

______________________ ______________________

______________________ ______________________

Fig. 1

Survey of Possible Effective Reinforcers

Time Out: A child's behavior may become so disruptive that he must be removed from the situation for a short while. This removal represents a time when no reinforcement is available on any terms. If a room or area is available where the child will receive no stimulation for a specified amount of time, this may be used. It is of no value to place a child in the hall or principal's office where there may be activity which could actually reinforce the child's problem behavior. If it's fun to go to the office, the child's problem behavior will increase. If a time-out room is not available, the child may be totally ignored for a few minutes. If he is engaged in a pleasurable activity when he misbehaves, he may be asked to sit out for awhile. The child should know why he is being removed and under what circumstances he will be allowed to return. (Passage of time or return to appropriate behavior)

Extinction: A behavior which receives no reinforcement at all will diminish until, after a time, it is no longer a part of the person's repertoire. Extinction is the process of altering consequences so reinforcement is not provided. For a behavior to be effectively extinguished, the true reinforcer must be discovered. If, for example, a child is acting out to receive attention from his classmates, the teacher's ignoring his behavior will not have an effect. Arrangements must be made to eliminate the peer attention the child is receiving.

Incompatible Behavior: Another effective way of reducing inappropriate behavior is to reinforce incompatible behavior. If a child gets out of his seat too often, rather than punishing him for being up, he may be rewarded for staying in his seat. It is obvious that he cannot stand and sit at the same time; so if the reinforcer is strong, his in-seat behavior will increase.

Premack Principle: Often, a behavior which is occurring infrequently can be increased by pairing it with a high frequency or pleasurable activity. For instance, if a child would rather draw on the board than go out to recess, it may be arranged for the child to draw on the board only after he has been out to recess.

Satiation: For many reasons, what has been reinforcing a child may become ineffective over time. If candy is being used, the child may have had all he wants or he may get tired of receiving the same treat. Verbal praise, too, can lose its effect if it is overused. To prevent satiation, reinforcers should be changed frequently and phrases used in verbal praise should be varied.

Target Behavior: This refers to the behavior to be increased or decreased. It is the observable subject of the behavior modification program.

Modeling: Children tend to copy or imitate those people they admire. A good model serves as an example of appropriate behavior which the child can emulate. Teachers, parents, peers, and others serve as examples after which children model their own behavior.

Shaping: It cannot be expected that a behavior will appear in its final form in the early stages of training. For instance, when a child learns his times tables, he will learn a few at a time until he masters the entire skill. If reinforcement is not given until all the times tables are mastered, the child may lose interest or feel the task is impossible. Shaping, then, refers to the process of reinforcing small steps in the direction of the goal. Once the goal has been selected, the teacher must break it down into orderly steps from most simple to most complex. Each step that is accomplished, starting with what the child can already do, is reinforced until the behavior is shaped to its final form.

Cueing: Cues can be arranged to alert a child before correct performance is expected. This arrangement avoids reprimands for incorrect performance because the child knows what is expected and when he should perform. The teacher may discuss a plan with a child which will aid him in remembering to write his name on his paper. As paper is passed out, the teacher may tap the chalkboard or do some other simple act to alert the child. As the child begins to write his name on his paper more consistently, the cues may be lessened and gradually omitted.

Setting Up a Behavior Modification Program

Selecting Behaviors to be Changed: Before a teacher can set up any kind of behavior modification program, she must carefully study what is already happening and what she wants for outcomes. Goals for each situation may be different, but they must be reasonable and ethical. If a behavior is to be changed merely for the teacher's benefit without concern for the child's development, the change is not justified.

Often we say, "Johnny is a problem child" or "I wish Susan would settle down." These statements are global cues that something is wrong, but offer no direction for a solution. Johnny needs to be observed to see what he does that causes a problem. Once the problem behaviors are pinpointed, they are stated in observable, countable and repeatable terms. It has been said that anything that can be observed can be counted. When a target behavior is stated in terms such as "out of his seat too often" or "talking out in class," it is then possible to find out how often this happens and to do something about decreasing the occurrence. In order to be repeatable, the phrase, "destroys property" is more effective than "tore Patty's dress."

In selecting target behaviors, the following should be kept in mind:

1. The more frequently a behavior already occurs, the easier it will be to change because there are more opportunities for reinforcement.
2. Only a few behaviors should be worked on at a time. It is an impossible job to mold all aspects of a child's behavior at one time. Select a few behaviors which are most in need of change and as the changes take place, others may be substituted.
3. Each target behavior must be broken into small steps of increasing difficulty. During training, behavior is shaped by reinforcing these small steps as they occur.
4. Behavioral objectives or statements of behavioral goals should, when possible, be written in positive terms. This helps keep the emphasis on positive reinforcement. "Bill will stay in his seat during study time" is a better statement than "Bill will not wander around the room."

Schedules of Reinforcement: Once the target behaviors have been selected and defined, the type of reinforcement is determined. A schedule for giving reinforcement is also planned. The type of positive reinforcement or punishment that works will vary from child to child. No matter how well defined a program may be, it will surely fail if ineffective reinforcers are selected. By observing the child, one can determine many things which that individual enjoys. An interview with the child and/or his parents can also bring about suggestions for reinforcers. Teachers using behavior modification must be prepared to be flexible in adapting reinforcers to meet individual needs.

To be most effective, reinforcement should closely follow the occurrence of appropriate behavior. A "100%" on completion of a paper is more effective than an"A" on a report card six weeks later. When tasks have been broken into small steps, each step should be reinforced as soon as possible after completion.

If, after careful application, positive methods do not appear to be working, and punishment is decided upon, it is important to remember that highly emotional or physically painful consequences are not necessary. Many things can be punishing to a child without involving argument, lecturing or loss of self control by the teacher. It must also be remembered that, as with positive reinforcers, blanket statements cannot be made as to what will punish a particular child. The teacher may become quite frustrated if she takes a child's candy away as punishment only to find the child did not want the candy anyway.

There are several schedules which can be followed in reinforcing behavior.

Continuous reinforcement. When a new task is being learned, acquisition is more rapid if reinforcement is given after each occurrence of the behavior. For example, a child who is being reinforced for coming to school on time will improve more quickly if he gets a checkmark every day that he is on time. Daily report cards may be more effective than semester reports.

Intermittent reinforcement. Once a behavior is mastered, continuous reinforcement becomes less effective. If reinforcement is discontinued at this time, it is very probable that the child will feel the game is over and the new behavior will be lost. For this reason, it is essential to switch to a program of intermittent reinforcement. Now the behavior is reinforced only part of the time and the frequency of reinforcement can be decreased gradually, until the program is phased out. This transition is a step that is often overlooked in classrooms. When the child begins to function well, either the program is dropped completely, or continuous reinforcement is continued too long. Teachers often cling to a program "because it is working," rather than allowing the student to become independent and self-controlling.

Intermittent reinforcement may take one, two, or a combination of three forms. Ratio. For every ten problems completed, reinforcement is given. Interval. Every fifteen minutes, those children who are working on their assignments will be reinforced. Variable. The child cannot predict when he will be reinforced. Reinforcement still immediately follows the specified behavior, but in a random pattern.

Alternative Programs: The principles of behavior modification can be applied in a variety of programs. Following are three ways of developing behavior modification programs.

Tangible Reinforcers: Often, criticism is leveled at behavior modification because of the use of candy, toys, etc. It is felt that children should learn for praise or for pure love of learning. For most children, these are effective motivators, but some children need more than praise to get them going. If a program of tangible reinforcement is decided upon, two pitfalls can be avoided. First, as previously stated, tangible reinforcers are not necessary for everyone. Application of an "M & M" program for a whole class may appear to work, but other, more traditional, reinforcers would probably also work. Second, tangible reinforcers should not be used in isolation. Pairing them with more traditional types of reinforcement can and should lead to less dependence on candy, etc. and more acceptance of praise or grades. If a child hears, "good work" as he receives his candy, soon "good work" will have a pleasing effect and the candy will not be as necessary.

Contingency Contracting: Negotiating a contingency contract involves an agreement between teacher and student as to what the child is expected to do in return for something he wants. To be effective, the contract must be fair to both parties, clearly stated, and agreed upon and adhered to by teacher and student alike. This type of agreement can be highly individualized. It offers the child a chance to say what he feels he can do and gives him a part of the planning.

Group contingencies may also be devised. It may be advantageous to make a privilege available to a whole group after each member has acted appropriately. (The class may go to recess when everyone is quiet.) The whole group may receive a reward when a particular member completes an act within his capability. (When Jan answers a question, everyone gets a point.) Or, a contingency may be arranged which each group member can receive individually. (Those who complete their math may have free time.)

Token Economy: Sometimes, reinforcement immediately after a behavior is not possible or practical. Yet, if the reinforcing event does not follow appropriate behavior immediately, its effectiveness is likely to be lost. When reinforcement must be delayed, a form of token reinforcement may be implemented. Points, poker chips, or other forms of tally are given immediately after an appropriate behavior occurs and exchanged during a specific time period for other things. Tangible objects, free time, or special privileges can be "bought" with tokens. If carefully administered, these programs can be quite effective. Here, as with all other types of behavior modification, the teacher must be flexible and alert to changing needs. A program which does not change to allow for satiation and does not move in the direction of self-control and independence is of little value.

Observing Behavior in Behavior Modification Programs

In order to determine whether or not progress is being made, some type of record-keeping device should be developed. This can be minimal or complex depending on the time available and the needs of the teacher. While record keeping is important, one need not become so involved with charting that time with children is sacrificed.

The teacher may devise a graph or tally sheet to mark when behavior occurs. Often the child himself can be involved in his own record keeping. This has added reinforcing value itself. The child feels responsible for his progress and is motivated to improve. In situations where aides or volunteers are available, they may be trained to observe and chart occurrence of behavior. This approach may be superior when the effect of a reinforcement program is being examined without the child's awareness.

Strategies for counting and charting behavior are numerous depending on the needs and creativity of the teacher. A simple tally of how many times a behavior occurs, marked on a 3x5 card may be sufficient. Certain periods of the day may be selected for observation (seat-work time, recess, etc.), or a spot check every half hour (15 minutes, 20 minutes, etc.) to see whether the child is engaged in a specified activity may be employed. Sometimes, the criterion is not how often a behavior occurs, but how long it lasts. In this case, the number of seconds or minutes the child spends in a given activity may be recorded.

If it is felt to be too time consuming to record a child's or class' target behavior while class is in session, tasks such as "number of math problems completed," "number of pages read," etc., can be counted after the children have left the room. It is of little value, however, to rely on memory when charting behaviors for which no concrete record is available. For example, the number of times a child talks out during a lesson cannot be tallied while the children are out to recess.

If it is decided that the strength of a certain reinforcer needs to be examined empirically, four stages of recording are compared.

1. Baseline. The frequency of the behavior is determined before any change is made in dealing with the child.
2. Treatment 1. When this frequency is fairly stable, the treatment or intervention is applied and again behavior is counted. If the treatment works, the frequency should change and then stabilize again.
3. Reversal. To determine **whether** the reinforcement is actually maintaining the new behavior, a return to conditions prior to intervention will show a trend toward return to baseline. If the behavior change is essential to classroom achievement, however, the reversal stage may not be practical as the child's progress would be temporarily sacrificed.
4. Treatment 2. The reinforcement condition is again applied and behavior should again improve.

A Final Note

The wise teacher will carefully study the concepts of behavior modification and plan her programs well before applying them. Difficult problems should be discussed with someone who has had experience with behavior modification; resource materials and consultants can offer specific suggestions when doubts are present.

Behavior modification is not a panacea for all behavior problems, but its effectiveness is supported by more scientific research in laboratory and classroom settings than other approaches to behavior management. It is a potentially effective tool which may be put to good use in classroom settings.

FERNALD METHOD

The Fernald tracing method or Fernald-Keller kinesthetic method was developed for use with extremely disabled readers. This multisensory cognitive approach first teaches a child to write words correctly, write stories using the words he learns, and read those stories in print. Later, he begins to read material other than his own. The program works well with older children who have not learned to read, because in the early stages the child selects the words to be studied. He is not limited by the simplicity of beginning reading materials. The program is divided into four stages.

Stage One: This stage emphasizes tracing words which the child has chosen to learn. Each word is printed for the child in blackboard-size print. As the child traces each word, he must touch the paper and pronounce the word (the words are pronounced in the way they sound without breaking them into separate letter sounds or syllables). When the word can be written correctly without looking at the copy, the child uses it in an original story. The story is typed by the teacher and the child files the new word alphabetically in his word file (this alphabetizing helps him learn the letters of the alphabet in a meaningful way.) If the child makes an error when attempting to write the word, the paper is taken away, more tracing is done and the child tries again on a clean sheet of paper. As the child learns words more quickly, fewer and fewer tracings are necessary and soon the activity can be eliminated.

Stage two: Stage two begins when the child no longer needs to trace a word to learn it. He can look at it, say it to himself, and then write it without looking at the copy. All other activities are the same as stage one--pronouncing while writing, writing and reading stories, and filing words alphabetically.

Stage three: The child now learns directly from words in print rather than having them written for him in large letters. In this stage he begins to read from books. He can select any book he wants, but may have more success if the books are not extremely difficult. The teacher tells him any words he doesn't know and later these words are studied in the method described.

Stage four: The child uses context clues and similarities to words he knows to decode new words. If he cannot figure out a word, he is told by the teacher and again uses the word-learning method to master it. When a child is reading on his grade level, formal training is discontinued.

SPALDING PHONICS METHOD

Ronalda Spalding developed what she called "The New Unified Phonics Method" as an alternative to sight methods which she criticizes for causing guessing and bad study habits. Her method must be followed exclusively and rigidly for best success. Spalding assumes all children can attend to group instruction, have large speaking vocabularies and have all the cognitive skills necessary to follow the program.

The method: The class is taught as a whole because Spalding feels that breaking into small groups wastes too much time. The teacher presents 70 phonograms representing the 45 basic sounds in the English language. Students repeat each sound and copy the written symbols for each in a notebook which must conform to exact standards (lower-case manuscript on 3/8 inch ruled paper, skipping every other line).

In teaching letter formation, Spalding uses a clock face. All letters follow a number sequence on the clock. For example, the pattern for S is 2-12-10-4-6-8. Spalding uses only phonetic sounds not letter names, as she feels the names confuse the young readers. Words which do not conform to the rules are taught as sight or as learned words, but there are few of these. Spalding claims that only 50 of 1,000 words on Leonard P. Ayres measuring scale for ability in spelling do not conform to her rules. She uses this list for spelling dictation.

As phonograms are learned, drills no longer include visual clues from the teacher. After all of the phonograms are mastered by at least one-half of the class, words are introduced in groups that follow phonetic rules. The teacher says each word clearly, pronouncing each phonogram in it, and uses carefully prescribed hand movements. It is believed that these hand movements are a valuable cue for students. The children repeat the words and copy them carefully in their notebooks.

As the phonetic rules are learned, a primer is introduced. This book has no pictures to give "guessing" clues. The presentation of books is delayed until this stage so that children can grasp the meaning of the stories.

GILLINGHAM-STILLMAN (ORTON) PHONICS METHOD

This method was developed by Gillingham and Betsy Stillman. They used Sam Orton's theories as their basis to build a program which could be used with children from ages six through high school. The emphasis in this alphabetic system is on auditory discrimination in contrast to other group methods which stress visual reception. The training is formal and steps must be followed strictly. Children are not allowed to read any other material while in early training. The auditory emphasis demands that children have auditory skills intact or more failure may be experienced. It is, therefore, important to diagnose strengths and weaknesses carefully before placing a child in this program. (Gillingham feels, however, that all children should use the program to prevent spelling difficulties as well as to learn to read.)

The instruction manual is very explicit. It defines eight "linkages" by which phonograms are taught (beginning with short a and several consonants). The eight linkages bring together auditory, visual and kinesthetic stimuli.

1. The teacher shows a phonogram and pronounces it. The students repeat the sound to associate it with the letter.
2. The children practice tracing, copying and writing the phonogram from memory.
3. The children name the phonogram when they see it. Each child's hand is moved to form the letter (this associates the look and feel of the letter).
4. The children write the phonogram from dictation.
5. The phonogram is shown and the children make the sound. Their hands are moved to form the letter, and again the children make the sound.
6. Children produce the sound when the phonogram's name is given.
7. The teacher makes the sound and the children give the phonogram name.
8. The teacher gives the sound; the children write the letter symbols and name them.

Blending is taught by placing several phonogram cards on the table. The children pronounce the sounds rapidly in succession. The day after blending is introduced "Simultaneous Oral Spelling" begins. The teacher sounds a word and the children identify the letters. They then write the letters and name them.

All work is done with purely phonetic words. Even after sound blending is mastered, all books are screened and only those whose vocabulary is purely phonetic are permitted. Later, after children can pronounce any combination of phonetic syllables, nonphonetic syllables are introduced as sight words.

Gillingham seems to assume comprehension will occur because little mention is made of word meaning practice.

MONROE PHONETIC METHOD

The Monroe Phonetic Method has been very effective with severely disabled readers; although it can be used with less severe problems, it is slow and laborious and other methods are more efficient for children with more normal skills. The program is highly individualized with emphasis on phonetic drill. The variety of activities is intended to keep work meaningful. The child's problems are carefully diagnosed, and the following activities are used as needed.

Vowel and consonant deficits are a major source of problems for poor readers. First, ability to discriminate sounds in speech and match them with letter symbols is taught. Several pictures that begin with the same consonant or contain the same vowel are glued on cards and studied by the student. Next, cards for two unlike sounds are mixed and the child says each sound to improve his discrimination. When the sounds have been learned, they are associated with letters through the activity of tracing. Sound blending is the next step in the progression. The child is encouraged to pronounce each sound separately if necessary as he traces and blends (left to right movement is stressed). Recall is tested with flash cards.

Specially prepared phonetic stories are used for reading practice, and nonphonetic words are taught by sounding and tracing or are determined from context as the child progresses.

Addition of sounds (most often l and r) may be caused by failure to discriminate consonant blends and word forms. Drills are given on word lists containing words that are alike except for the presence of l or r (tack, track, fat, flat).

Omissions may be caused by too much speed or poor visual discrimination. Often, use of the method for teaching vowels and consonants as mentioned may eliminate the problem. If speed is the cause, slower reading rate is encouraged. If repetitions occur, due to insufficient word recognition or stalling to figure out words, use methods described for teaching letter sounds. If repeating is a habit it should be pointed out continuously so the child will attempt to correct it himself (oral reading with the teacher and student together helps to call attention to the repetition).

Addition of adjectives and adverbs should be ignored unless it changes meaning. In this case, attention should be called to what is happening in the story.

GATES READING METHOD

Gates feels that it is necessary to use the same methods with severely retarded readers as are used in the best programs for normal children. He is opposed to the more rigid programs such as Fernald and Monroe. Enrichment, not restriction, is his emphasis. This program is very flexible. Its success depends on the teacher, who must diagnose carefully and choose the proper approach for each child. The teacher must also take time to demonstrate and explain as many times as necessary to keep the child moving at the proper pace. If, after experience with conventional programs, the child fails to make progress, it may be necessary for the teacher to resort to tracing and writing techniques for a short time only. As soon as the child demonstrates that he can maintain left to right progression he should go back to the other methods.

STERN ARITHMETIC METHOD

Very few attempts have been made to develop arithmetic programs for the learning disabled, other than Katherine Stern's Instructional Arithmetic. This widely used, systematic approach is based on the idea that arithmetic is the foundation of mathematics and science study. Concrete materials are used in demonstration experiements and games to teach number relationships. The child can immediately see if he is right or wrong when he manipulates the materials. Four different level kits which include teacher's manuals, film strips, materials and pupil workbooks are available.

LEHTINEN PERCEPTUAL METHOD

Lehtinen based her work on research by Strauss, and although she was one of the earliest to provide programs for minimally brain damaged children, her methods are still widely used. The brain injured child has disorders in perception and conceptual formation. He is abnormally aware of stimuli and reacts strongly. To help him concentrate on learning, the environment must be controlled and structured. Emphasis is placed on self-control and remediation of weaknesses, rather than building on strengths. Lessons are activity oriented, not drill oriented. Lehtinen feels excessive drill may cause the child to rely on rote memorization without comprehension. Motor activities, such as sorting, cutting, printing or writing, and manipulating counters and gadgets are used. The children develop their own materials for these activities in order to gain insight into how materials are made and used. Use of materials, not the materials themselves, is the mainstay of this method. Normal organization of parts and relatedness of parts in pattern are the underlying concepts taught.

BARRY LANGUAGE APPROACH

The Barry approach is directed to teaching receptive and expressive language to learning disabled children of normal intelligence. Barry's emphasis is on learning disabilities rather than peripheral hearing loss, mental retardation, or emotional disturbances. Her program is very valuable and useful, not only for language training, but for other related functions.

Multisensory stimuli are provided. Training begins with color words. Two-inch color blocks are used to teach the various colors. The teacher sits very close to the child to maintain visual attention and a hearing tube is used for auditory attention. After the teacher has instructed the child, she asks, "Where is red," or, "Where is the red block?" The child responds by picking up the correct block. After the child demonstrated that he knows several colors, the teacher sits behind him and asks for the colors. If this approach is too difficult, written colored words are used in place of auditory clues. The child matches colors and colored words and traces the words. Soon, the words are printed in black. In extreme cases, where the color concept proves too complex, toys may be used in place of blocks. After color words, teaching follows this progression. Nouns, verbs, prepositions, simple commands, and prepositional phrases.

When the child appears to have good command of receptive language, expressive language training begins. Nouns are taught first, then verbs, prepositions, pronouns, phrases and sentences are presented. Once the child has adequate vocabulary and knows the parts of speech, complete sentences are required. Children are encouraged to build language skill by talking about interests and experiences. Older children learn dictionary use, spelling rules and grammar.

MYKLEBUST LANGUAGE APPROACH

Helmer Myklebust has dedicated many years of study to the development of programs for learning disabled children. Although his major thrust is in auditory language, he recognizes the important relationship between visual, auditory and graphic channels in verbal and nonverbal learning.

Myklebust identified twelve fundamental principles which were used to develop specific methods of remediation in areas of language, reading, written language, arithmetic and nonverbal learning. The principles are:

1. Teaching must be individualized.
2. Teaching according to readiness in a balanced program is essential.
3. Teaching must be as close to the level of involvement as possible.
4. Consider that input precedes output as a basis for classification or grouping.
5. Teach to the tolerance level, avoiding overloading in particular.
6. Use multisensory stimulation.
7. Raise the deficits without undue stimulation or demand of the disability itself.
8. Teaching to the integrities is necessary, but has limitations.
9. Provide training in perception when needed.
10. Control important variables such as attention, rate, proximity and size as needed.
11. Develop both the verbal and nonverbal areas of experience.
12. Guide the approach by both behavioral criteria and psychoneurological considerations.

Auditory language disorders: When auditory language deficits are recognized, training should begin early. Receptive language is developed before expressive. Children are taught in meaningful units to associate environmental sounds with objects and to understand the sounds of speech. Much repetition may be required. The order of presentation for the parts of speech is sounds, nouns, verbs, adjectives, prepositions. Three types of auditory-expressive language disorders are most common. Re-auditorization problems are characterized by inability to recall words or word finding difficulty. Sentence completion exercises together with picture cues and word associations, such as bread and butter, and needles and pins, aid in training spontaneous recall of words. Auditory-motor integration problems (inability to say words) is another problem. Sounds the child can make already are developed before new ones are introduced. The child is taught to voluntarily repeat words and communicate meaningfully. The third major disorder of language is syntax and organization. Two suggested activities are: Scrambled sentences wherein the child puts words in proper sequence; and incomplete sentences wherein the child supplies a suitable word to complete the sentence.

Myklebust's goal in remediation of reading problems is to integrate experience, spoken words and printed words. He identified two common forms of dyslexia--visual and auditory--for which recommendations are quite different. Visual dyslexia requires a phonetic approach as the difficulties stem from inability to associate printed words with meaning. Auditory dyslexia, in contrast, implies difficulty in dealing with sounds in words. Whole word methods in which printed words are matched with objects and experiences are advised.

Three major forms of written language disorders are discussed by Johnson and Myklebust. Correction of dysgraphia (problem of visual-motor integration) begins with the use of stencils, dot-to-dot, and tracing. When the child is successful with these activities he is taught manuscript letters and numbers. At the beginning of this training, each figure has arrows superimposed to show the direction to move in completing the letters.

Revisualization (visual-memory) training uses words printed in larger type and perhaps in color to strengthen the visual impression. Auditory and tactile reinforcement also help strengthen recall. Completion of partially drawn pictures from memory and making a circle into as many pictures as possible, are suggested activities. In working with disorders of formulation and syntax, the child must become aware of his errors in writing. The child can listen to the teacher read aloud sentences he has written, listening for errors. Later, he reads his own work aloud and monitors the errors.

The emphasis in remediating arithmetic disorders is on concrete experiences. Counting beads and other motor activities are used in conjunction with visual symbols and verbal cues.

The most important factor in remediating nonverbal disorders is use of realistic pictures and photographs. Nonverbal motor skills are taught in basic movement patterns. For example, in learning to skip, the child is taught how to stand first on one foot, then the other foot. He watches himself in a mirror, listens to others while skipping, and then is encouraged to try the activity.

APPENDIX F

List of Publishers of Instructional Materials

As RMRRC staff members worked with teachers and children in the public schools, and later as they trained generalists, they gathered information on many types of available instructional materials. Included here are charts detailing types of materials available and addresses for the publishers. Following the charts is a brief description of each of the Format items.

This listing is not comprehensive, and the intent is to provide information only. Inclusion on or exclusion from the list is not meant to imply evaluation or recommendation of any of the materials listed or not included.

	READINESS			LANGUAGE ARTS			MATH			FORMAT								
	Motor	Perception	Language Dev.	Reading	Spelling	Writing	Readiness	Computational	Functional	Tutoring	Games	Paperback	Programmed	Visual	Low Vocab.	Dittos	Audio	Affective
Acustifone Corp.				X	X	X	X	X		X	X			X	X		X	
Addison-Wesley Publishing Co.		X	X	X			X	X		X	X				X	X	X	
Allied Educational Council	X	X	X	X			X	X	X				X					
Allyn and Bacon, Inc.			X	X	X	X						X		X	X	X	X	
American Book/Van Nostrand Co.		X	X											X			X	X
American Guidance Service, Inc.		X	X	X							X			X			X	X
Academic Book Service, Inc. West				X								X			X			
Bailey Film Associates		X	X	X				X		X				X			X	X
Barnell Loft, Ltd.				X											X			
Bell and Howell Co.		X	X	X			X	X		X	X			X			X	
Benefic Press				X										X	X		X	
Benziger, Ing.				X	X	X								X				
Bobbs-Merrill Co.				X		X								X				
Booster Educational Services				X				X		X				X		X		
Borg-Warner		X	X	X	X		X	X	X	X	X		X	X	X		X	
Bowmar	X	X	X	X						X	X	X	X	X	X	X	X	X
Milton Bradley Co.	X	X	X	X	X	X	X	X	X		X			X		X	X	

	READINESS			LANGUAGE ARTS			MATH			FORMAT								
	Motor	Perception	Language Dev.	Reading	Spelling	Writing	Readiness	Computational	Functional	Tutoring	Games	Paperback	Programmed	Visual	Low Vocab.	Dittos	Audio	Affective
Chandler Publishing Co.				X		X								X	X			
Child's World, Inc.			X													X		X
Continental Press, Inc.	X	X	X	X	X	X	X	X	X					X	X	X		
David C. Cook Publishing Co.		X	X											X				
Coronet Instructional Films		X	X	X			X	X		X				X			X	X
Cuisenaire Co. of America, Inc.	X	X					X	X	X		X			X				
DLM Developmental Learning Materials	X	X	X	X	X	X	X	X	X	X	X			X	X	X	X	X
Walt Disney		X	X	X			X	X		X				X			X	
Doubleday Multimedia		X	X	X			X	X		X				X			X	
The Economy Co.				X	X	X												
Edu-Cards		X	X	X	X		X	X		X	X			X				
Educational Activities, Inc.	X	X	X	X			X	X									X	X
Educational Development Lab.	X	X	X	X	X		X	X	X	X				X	X	X	X	
Educational Progress Corp.	X	X	X	X	X		X	X		X				X	X	X	X	
Electronic Futures, Inc.			X	X	X		X	X		X							X	
Exceptionale Products Corp.				X														
Eye Gate House, Inc.		X	X	X			X	X		X				X	X		X	X

Fearon Publishers/Lear Seigler	X	X	X	X	X	X	X	X	X			X			X			
Finney Co.				X	X		X	X	X						X			
Follett Publishing Co.	X	X	X	X	X	X	X	X		X					X	X		
Garrard Publishing Co.		X		X						X	X	X			X			
General Learning Corp.	X	X	X	X	X		X	X		X	X							
Ginn and Co.	X	X	X	X	X	X	X	X			X					X		
Globe Book Co.				X	X				X			X			X			
Grolier Educational Corp.				X	X					X					X		X	
Guidance Associates of Pleasantville										X							X	X
Hammond Reading Co.				X	X					X		X			X			
Harcourt, Brace and Jovanovich, Inc.				X	X	X									X			X
Harper and Row				X										X				X
D.C. Heath and Co.				X	X			X							X	X		
Hed, Inc.							X		X	X	X							
Hoffman Information System, Inc.		X	X	X	X		X	X	X	X					X		X	
Holt, Rinehart, and Winston, Inc.		X	X	X			X	X	X			X		X	X		X	
Houghton Mifflin Co.				X			X	X	X	X		X			X	X		
Ideal School Supply Co.	X	X	X	X	X	X	X	X	X									
Instructo Products Corp.	X	X	X	X			X	X		X	X			X		X		
Judy Co.	X	X	X	X			X	X		X	X			X	X			

	READINESS			LANGUAGE ARTS			MATH			FORMAT								
	Motor	Perception	Language Dev.	Reading	Spelling	Writing	Readiness	Computational	Functional	Tutoring	Games	Paperback	Programmed	Visual	Low Vocab.	Dittos	Audio	Affective
Kenworthy Educational Service, Inc.	X	X	X	X	X		X	X	X	X	X				X			
King Co.				X								X			X			
Knowledge Aid		X	X	X	X		X	X	X	X					X		X	X
Laidlaw Brothers		X	X	X											X			
Learning Research Associates, Inc.				X	X	X	X	X	X	X	X		X		X		X	
Lippincott, and Co.		X	X	X	X	X				X				X	X		X	
Mafex Associates		X	X	X	X	X	X	X	X						X			
McCormick Mathers Publishing Co.							X	X	X						X			
McGraw-Hill Book Co., Inc.	X	X	X	X	X		X	X	X	X		X	X		X	X	X	
Charles E. Merrill				X	X		X	X	X	X		X			X	X	X	X
Milliken Publishing Co.		X	X	X	X		X	X	X					X		X		
Milton Bradley	X	X	X	X	X	X	X	X	X	X	X			X				X
Noble and Noble Publishers, Inc.				X	X	X	X	X							X			
Open Court Publishing Co.	X	X	X	X	X						X			X				
Phonovisual Products, Inc.				X						X				X			X	
Playskool	X	X	X	X			X			X	X							
Portal Press, Inc.																		

Prentice-Hall, Inc.				X	X		X	X	X			X			X			
Pruett Publishing Co.				X	X		X	X	X						X			
Psychotechnics, Corp.		X	X	X	X					X					X		X	
Pendulum Press				X								X			X			
QUED Productions	X	X	X				X			X							X	X
Frank E. Richards				X			X	X	X						X			
Reader's Digest Services, Inc.		X	X	X						X		X			X		X	
Responsive Environments Corp.		X	X	X						X							X	
Rhythm Records	X	X	X	X			X	X	X	X							X	
Rand-McNally				X	X				X	X	X							X
Random House/Singer School Division	X	X	X	X		X	X	X		X				X	X		X	X
William H. Sadlier, Inc.															X			
Scholastic Book Services	X	X	X	X			X	X		X		X		X	X	X	X	X
Scholastic Educational Corp.				X								X			X			
Scott Foresman and Co.		X	X	X						X					X		X	
Scott Education Division				X			X	X		X	X			X			X	
Simon and Schuster				X								X			X			
Stanwix House, Inc.		X	X	X											X			X
Steck-Vaughn Co.				X	X			X	X						X			X
Taylor Associates				X											X			

	READINESS			LANGUAGE ARTS			MATH			FORMAT								
	Motor	Perception	Language Dev.	Reading	Spelling	Writing	Readiness	Computational	Functional	Tutoring	Games	Paperback	Programmed	Visual	Low Vocab.	Dittos	Audio	Affective
Teaching Resources, Inc.	X	X	X	X		X	X			X	X							
Charles C. Thomas, Publishing		X	X	X			X		X						X			
Fern Tripp									X									
Troll Associates		X	X	X			X			X				X				
VMI		X	X	X			X	X	X					X		X		
Franklin Watts, Inc.				X														
Weston Woods				X						X				X			X	

Brief Definitions of Format Items

Tutoring:	These are structured or informal materials that are self-tutoring, e.g., drills, film-strips, etc.
Games:	These include fun games and games that provide instructions and drill.
Paperback:	This refers to paperback books that are used primarily in reading.
Programming:	These are programmed materials, either books or machine programmed.
Visual:	Charts and pictures used primarily for visual stimuli.
Low Vocabulary:	These are high-interest, low vocabulary books. Paperbacks and hardbacks are included.
Ditto/Spirit Masters:	These materials are already printed on spirit masters or duplication rights are already given for thermofax and spirit duplicator use.
Audio:	The primary input is audio, e.g., tapes or records.
Affective:	The emphasis is on the feelings and self-concept of the student.

Addresses of Publishers Included in the List

Acustifone Corporation
20149 Sunburst Street
Chatsworth, California 91311

Addison-Wesley Publishing Co.
Sand Hill Road
Menlo Park, Calif. 94025

Allied Educational Council
Distribution Center
P.O. Box 78
Galien, Michigan 49113

Allyn and Bacon, Inc.
Ralston Park
Belmont, California 94002

American Book/Van Nostrand Co.
399 Adrian Road
Millbrae, California 94030

American Guidance Service, Inc.
Publisher's Building
Circle Pines, Minnesota 55014

Academic Book Service, Inc., West
9830 Baldwin Place
El Monte, Calif. 91731

Bailey Film Associates
5995 South Clarkson
Littleton, Colorado

Barnell Loft, Ltd.
958 Church Street
Rockville Center
Long Island, New York 11510

Bell and Howell Company
7100 North McCormick Road
Chicago, Illinois 60645

Benefic Press
Lambert Bldg., Suite 202
200 Nieto Avenue
Long Beach, Calif. 90803

Benziger, Inc.
866 Third Avenue
New York, New York 10022

Bobbs-Merrill Company
4300 West 62nd Street
Indianapolis, Indiana 46268

Booster Educational Services
Box 577
Delta, Utah 84624

Borg-Warner
7450 North Natchez Avenue
Niles, Illinois 60648

Bowman
622 Rodier Drive
Glendale, California 91201

Milton Bradley Company
443 Shaker Road
Longmeadow, Massachusetts 01028

Chandler Publishing Company
124 Spear Street
San Francisco, California 94105

Child's World
Box 681
Elgin, Illinois 60120

Continental Press, Inc.
367 South Pasadena Avenue
Pasadena, California 91109

David C. Cook Publishing Co.
School Products Division
850 North Grove Avenue
Elgin, Illinois 60120

Coronet Instructional Films
65 East South Water Street
Chicago, Illinois 60601

Cuisenaire Company of America, Inc.
12 Church Street
New Rochelle, New York 10805

DLM Developmental Learning Materials
3505 North Ashland Avenue
Chicago, Illinois 60657

Walt Disney
Buena Vista Distribution Co., Inc.
800 Sonora Avenue
Glendale, California 91201

Doubleday Multimedia
8348 Sheffield Road
San Gabriel, California 91775

The Economy Company
P.O. Box 25308
Oklahoma City, Oklahoma 73125

Edu-Cards
60 Austin Blvd.
Commack, New York 11725

Educational Activities, Inc.
Box 392
Freeport, New York 11520

Educational Developmental Lab.
284 Pulaski Road
Huntington, New York 11743

Educational Progress Corp.
8538 East 41 Street
Tulsa, Oklahoma 74145

Electronic Futures, Inc.
917 South York Road
Elmhurst, Illinois 60126

Exceptionale Products Corp.
P.O. Box 23014
Richfield Branch
Richfield, Minnesota 55423

Eye Gate House, Inc.
146-01 Archer Avenue
Englewood Cliffs, New Jersey 07632

Fearon Publishers/Lear Seigler
6 Davis Drive
Belmont, California 94002

Finney Company
3350 Gorham Avenue
Minnespolis, Minnesota

Follett Publishing Company
1010 West Washington Blvd.
Chicago, Illinois 60607

Garrard Publishing Company
1607 North Market Street
Champaign, Illinois

General Learning Corporation
250 James Street
Morristown, New Jersey 07960

Ginn and Company
2550 Hanover Street
Palo Alto, Calif. 94304

Globe Book Company
175 Fifth Avenue
New York, New York 10010

Grolier Educational Corporation
845 Third Avenue
New York, New York 10022

Guidance Associates of Pleasantville
Pleasantville,
New York 10570

Hammond Reading Company
4645 Holiday Blvd.
Salt Lake City, Utah 84117

Harcourt, Brace and Jovanovich, Inc.
Polk and Geary
San Francisco, California 94109

Harper and Row
P.O. Box 370
Pleasanton, California 94556

D.C. Heath and Company
2700 North Richard Avenue
Indianapolis, Indiana 46219

Hed, Inc.
P.O. Box 1
Fort Collins, Colorado

Hoffman Information System, Inc.
5623 Peck Road
Arcadia, California 91006

Holt, Rinehart and Winston, Inc.
Crocker Park
Box 3400
San Francisco, California 94134

Houghton Mifflin Company
777 California Avenue
Palo Alto, California 94304

Ideal School Supply Company
11000 South Lavergne Avenue
Oak Lawn, Illinois 60453

Instructo Products Corp.
Paoli,
Pennsylvania 19301

Judy Company
250 James Street
Morristown, New Jersey 07960

Kenworthy Educational Service, Inc.
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APPENDIX G

The Original Training Program

Appendix G

THE ORIGINAL TRAINING PROGRAM: An Overview of Development

Stratistician Program

During the 1970-71 school year, RMRRC personnel met with members of the Utah State Board of Education (USBE), district directors of special education, and faculty members of the University of Utah, Department of Special Education, to formulate a plan to best meet the priority unmet need of handicapped children in Utah. At that time the state was providing adequate educational services to approximately 60 percent of the handicapped population in the state. It was postulated that the 40 percent of unserved children would be found in the regular classrooms. A method was conceptualized wherein a person--a stratistician--would be placed in an elementary school to provide help to any teacher who was having "trouble" with a student. Because the regular classroom teacher has responsibility for the student through the school day, and because it had been postulated that the majority of unserved children are in regular classrooms, the main focus of the stratistician was to train the regular classroom teacher in the skills necessary to work with the handicapped children in the class.

By focusing on the teacher, there is a potential "spin-off" effect. For example, if a teacher refers a student who is falling behind in his work and is causing difficulty in the class, and it is found--through some diagnostic measures--that the student has an auditory sequential memory problem, the stratistician would work with the teacher in several areas: help the teacher recognize the symptoms of the problem; help the teacher in the area of curriculum for that student; and relay information to the teacher about the most effective teaching styles for a child with auditory sequential memory problems. The "spin-off" effect applies to every skill that is taught by the teacher, not just for the specific child or for the class she is now teaching, but for future classes as well, assuming she retains the skill.

In addition to providing service to teachers, and therefore to students, the stratisticians were asked to collect data on the types of problems referred, the strategies they developed to deal with the problems, and to keep track of the skills they found were necessary to function as a stratistician. These types of data were collected for two years, with the aim of testing the transferability of the model.

A proposal to test the model on a broader base was formulated with the cooperation of the USBE. A letter was sent from the Deputy Superintendent's office to 30 school districts, primarily rural, to invite them to participate with the RMRRC during the 1973-74 school year in a project to train special educators in elementary schools to function as stratisticians. Twenty-one school districts replied, and these 21 were contacted with details of the program and of the accompanying comprehensive evaluation of the impact of the program. Details specified that the district would provide a certified special educator already on their salary roles. This person would be available for a two-week training period in August and would be released from the district one day per month for follow-up training sessions. In return the RMRRC would provide a staff member to meet at least twice a month with the selected special educator in his school; to provide the two-week training session; to cover all costs of data collection and all costs of travel to and from the center. These arrangements were to continue throughout the school year. Agreements were reached with 11 districts, and 17 special educators from 17 elementary schools.

Development of the Training Program

In developing a training program for the 17 selected special educators, three major constraints had to be considered:

1. Variety of Professional Backgrounds in Training. To function as a resource teacher or a generalist in the State of Utah, a person may hold one of four different special education endorsements: learning disabilities, mental retardation, behavioral disorders, or speech and hearing. The people coming into the training program could come from any or all of these four special education backgrounds. Furthermore,

they would have been trained at various teacher training institutions; certification programs in the four areas vary greatly in course content between institutions.

2. *Variance of Professional Experiences.* Because the districts selected the special educators who would be participating in the program, it was anticipated that some of the special educators would have previous experience in resource rooms, some would have previous experience in regular classrooms, and some--just graduated--would not have any actual teaching experience. There were also some participants who had previously served in support roles, such as a psychologist, a social worker and a counselor.

3. *Variance in School Beginning Dates.* Being involved in 11 districts across the state meant that some classrooms were opening as early as August 24, and others not until September 6. This variance effected the availability of the participants for training in August.

It was felt that the training program could best neutralize these three constraints if it were individualized and competency based. This would allow for the variance in professional expertise and experience, as well as the staggered starting dates. A period of three weeks was set aside in August. Participants could begin on any of six starting dates and participate for 10 days.

An extensive evaluation was undertaken to identify the competencies needed to function in this role. In addition to data collected by the stratisticians while they were working in the role, other data were collected from three school districts where special educators were working in resource room/generalist programs. These resource teachers or generalists were asked to list the skills they felt were needed to fill their role--whether they had the skills or not. In some instances they were asked to prioritize the lists. A workshop was also conducted by the USBE in cooperation with Project Outreach-Utah; participants were invited to brainstorm their perceptions of student problems. Over 100 problems were listed and compiled into major groupings.

Lists of skills needed were then generated to help meet the needs that had been identified. Data from the stratisticians, from local districts, and from this workshop were then pooled with information gathered by writing to various universities, teacher training institutions, and state departments of education--all of them involved in competency based or performance-based programs. (For a list of sources see Attachment A.) A staff member was assigned to gestalt this material and provide a list of all competencies suggested as well as a frequency count to determine those most frequently suggested. The competencies fell into the content areas of identification, diagnosis, prescription, programming, evaluation and interpersonal skills. The first five content areas were consistent with the Regional Resource Center mandate for service under PL 91-230. Interpersonal skills received a high-frequency count, especially from field data.

At the same time competencies were being identified, the structure of competency training programs was being reviewed. (For a list of sources reviewed see Attachment B.) Most training programs identified content areas felt to be needed, but few training programs specified clearly the levels to which one should "know" a content area or the process level at which one would use the information. Two notable exceptions are the Ed Meyen, Ruben Altman training program at the University of Missouri, and Lloyd McCleary's training program in educational administration at the University of Utah. Meyen and Altman talked about an awareness, understanding, application level; McCleary about familiarity, understanding, and application levels of utilizing information.

The RMRRC staff adopted, from Bloom's Taxonomy of Educational Objectives, the process levels of knowledge, comprehension, application, analysis, synthesis, and evaluation. The content-process areas form a matrix upon which all competency statements can be placed. (See Figure 1.) The matrix enables decision-making

Content

PROCESS

	IDENITY	DIAGNOSE	PRESCRIBE	PROGRAM	EVALUATE
KNOWLEDGE (recall)					
COMPREHENSION (understanding)	1 2	7 8		19	
APPLICATION (use)	3 4	9 10		20	
ANALYSIS (clarify)	5	11 12 13	16		
SYNTHESIS (regestalt)			17	21	23
EVALUATION (judgment)	6	14 15	18	22	24

INTER SKILLS
a b c d

Figure 1

Placement of Learning Modules by Number on the Content-Process Grid in developing training modules: to which level does a given person need to know certain information, and in which certain content areas? Decisions were made as to what a stratistician needs only to know compared with what he actually needs to be able to do. The competency statements were crystallized into the following statements around which training modules would be developed.

Modules

Identification

The generalist shall:

demonstrate an understanding of specific specialty areas and classification criteria;

demonstrate an understanding of learning theories;

utilize conventional task analysis of basic subject areas;

utilize conventional process analysis of basic subskills (in task analysis);

interpret personality-behavioral patterns;

synthesize identification factors and derive a diagnostic direction.

Diagnosis

The generalist shall:

demonstrate an understanding of student demographic variables;

demonstrate an understanding of formal test batteries;

administer formal test batteries;

administer informal test batteries;

interpret formal test batteries;

interpret informal test batteries;

interpret pupil interviews and observations;

formulate a diagnostic statement from a single test;

formulate diagnostic conclusions from cumulative information.

Prescription

The generalist shall:

interpret the results of task and process analysis;

write a statement(s) about a student's learning style based on strengths and weaknesses;

match diagnostic appraisal with a remedial approach.

Programming

The generalist shall:

demonstrate understanding of purpose and use of instructional material;

demonstrate the use of instructional methods/techniques;

match instructional materials and/or methods/techniques with diagnostic-remedial approach;

specify performance criteria within an instructional program.

Evaluation

The generalist shall:

match performance adjustment to performance criteria;

determine adjustment as acceptable or unacceptable.

Interpersonal Communication Skills

The generalist shall demonstrate an awareness of:

> important factors in relating as a human being;
>
> important factors in the communication process between two people;
>
> problem-solving methodology;
>
> factors critical to acceptance in schools.

These modules were numbered 1 through 24 and the interpersonal skills a, b, c and d; the numbers and letters were placed in the appropriate content-process square in the matrix, as seen in Figure 1. Each module was to be developed based on the content area and the process level involved.

Testing for Placement and Evaluation

A pre-test question, a post-test question, and a performance objective were also written for each module. The purpose of the pre-test question was to enable a participant who knew enough about a particular module to test out of the module without further training. A profile was created on each participant's responses to the pre-test questionnaire to define which of the 24 modules could be skipped, and which would require training. The performance objective was used to enable the trainer to know when the participant was finished with a particular module, and the post-test question was written to evaluate the effect of the training program.

Two-Week Training Session

As each participant entered the training program, he was assigned, according to the geographic location of his school, to an RMRRC stratistician who would keep track of the participant's progress. The RMRRC stratistician had a profile on the individual's needs according to the content-process matrix; the stratistician worked out a time schedule, dividing the ten days into two 3-hour blocks for each day. The generalist participant would then be grouped in those time blocks with others going through the same material at specific times. A participant could be part of the total group, in a small group, with just one other, or be working by himself--depending on his needs and the needs of the others in the training program. Each generalist received all the written material from the 24 modules for reference, even if training in all 24 was not needed. At the end of the two-week training, the participant completed a post-test. The stratistician who was responsible for guiding the participant through the training program was then assigned as the intermediate stratistician who would continue to provide backup support and ongoing training to the participant throughout the school year.

Orientation

During August, attempts were made by the training coordinator and the evaluation coordinator at the RMRRC to meet with all 17 principals of the schools and the district directors of special education from the 11 districts to orient them to the program. This included an overview of the stratistician concept, an overview of the development and structure of the training program, the support service model from the RMRRC to the schools, and the evaluation process. In addition, an attempt was made to orient the faculty members of the 17 schools just prior to the start of school, or during the first two weeks of school. This was to familiarize the regular classroom teachers in the 17 schools with the concept, to create awareness of the support services available to them, and to specify what the program could mean to each of them in the classroom.

Follow-up

During the 1973-74 school year, the intermediate stratisticians were to visit with the participants in their schools at least twice a month. The participants were to meet at the RMRRC at least once a month. The purpose of these meetings was not only to provide additional help where needed to the participants, but to also gain feedback from them on the training program. A three-day session at the end of the school year was planned to enable the participants to review the training materials and make suggestions to the RMRRC for improvements in the program.

ATTACHMENT A

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APPENDIX H

The RMRRC Stratistician Project

Appendix H: The RMRRC Stratistician Project

INTRODUCTION

The stratistician project was carried out by the Rocky Mountain Regional Resource Center (RMRRC), one of six Regional Resource Centers funded by the Bureau of Education for the Handicapped (BEH) prior to June 1974. The stratistician effort was originally conceived as a five-year process. The first year was dedicated to assessing the service needs in Utah and to planning. The second and third years were a pilot phase of development to gather information and try out a service pattern. The fourth year was to develop and to expand the model and gather further data. The final year was to be for evaluation and recommendations. In June, 1974, BEH expanded the number of RRCs across the country and changed the geographic regions and the focus of the existing RRCs. It was not possible to complete the final evaluation phase because of these changes. The work done in the first four years, however, was valuable and is reported in this paper.

YEAR ONE

The stratistician concept evolved as a result of planning meetings with RRC staff attended by special educators from the Utah State Board of Education (USBE), from local school districts and from the University of Utah. The purpose of these meetings was to determine how the RMRRC could be most effective in helping the state meet needs in delivering educational services to handicapped children and youth in the State of Utah. These discussions seemed to indicate that:

1. The state of Utah was serving approximately 60 percent of the expected handicapped population of the state.
2. Most of the moderately, severely and profoundly handicapped children were identified and in some type of program.
3. The approximate 40 percent of students not being served would probably be found in the school system, in regular education classrooms; they were not necessarily identified or receiving services.

Solutions were sought for problems related to that portion of the expected handicapped population in regular classrooms who were not receiving services. A decision was made to place several individuals in the school system to gather information on the needs of this population. The following were basic ideas relating to these placements:

1. The project would focus primarily on children in elementary schools.
2. The person placed in the school would need to be able to function in a way uniquely different from traditional roles. The name "stratistician" was coined by combining "strategist" and "diagnostician." It was anticipated that the title would not give cues that would relate to the functions of a psychologist, social worker, nurse, special educator (such as a resource teacher or teacher in a self-contained class), district curriculum specialist, administrator, or counselor.
3. In order to gain information on the kinds of problems the elementary school teacher experienced with difficult students (who were believed to mainly be the unserved handicapped students), the stratistician would respond to any type of problem referred.
4. Instead of focusing efforts directly on the referred child, the stratistician's major focus would be on the teacher referring the child. This attempt to increase the skills of the referring teacher was based on the following ideas.

    a. Unless completely removed from the teacher's class, the child will spend most of his school day in that class.
    b. Most regular classroom teachers have many skills they do not use. In many cases it is not a matter of teaching new skills, but of eliciting skills already there.
    c. Possibly there would be other students in the classroom with the same problem as the referred student. Improving the teacher's skills would help provide better service to more children than the one referred.
    d. Skills learned in working with exceptional children would be useful with all students in the classroom.
    e. Not only would the current class benefit, but the teacher's future classes should also benefit.

5. The stratistician could facilitate the coordination of all available resources on behalf of the child. This would include resources in the school (principal, other teachers, other special educators, if available), resources in the school district (psychologists, social workers, nurses, counselors, curriculum specialists, speech therapists, vocational rehabilitationists, community groups), resources in intermediate or multi-district centers where available, and resources from state, regional and federal programs.

During this planning phase, contacts were made with districts to discuss placing a stratistician in schools within their jurisdiction. Three districts and one multidistrict service agency with different resource support systems were selected by mutual agreement of the districts involved, the USBE and the RMRRC.

Because of the unique nature of the proposed role, and the difficulty in predicting the possible problems a person in this role would encounter, the utmost care was taken to select the people to pilot the role. Those selected:

1. were able to work with a wide variety of educational problems because of their knowledge of the diagnostic-prescriptive process;
2. seemed to reflect personal qualities of openness, to be nonjudgmental, to have a high tolerance for ambiguity, to possess a problem-solving approach, and a high degree of acceptance of self and others;
3. had prior experience in the school system including teaching experience;
4. had special education or educational psychology background with a master's degree;
5. were recommended for the position by district, state and/or university personnel.

Prior to the start of the school year the six selected persons participated in a structured sharing of past experiences and knowledge gained from those experiences that might be of value to the future role as a stratistician. This experience seemed to be helpful in two ways. First, the persons selected were skilled people from a wide variety of backgrounds and had the ability to communicate useful information; second, each person became known to his peers as a highly capable person who could be a valuable resource in the future.

YEAR TWO

The six stratisticians were placed in five elementary schools in three districts and one multidistrict service center. The five schools provided a variety of settings from a suburban school to a school on an isolated military base, from those in districts with a lot of support services to those with few support services, from one with a roughly middle-class population to one with a high percentage of underprivileged children, and from those with other special education services in the building to those where the stratistician would be the only special educator available. The stratistician placed in the multi-district service center was to serve 52 schools in six rural, sparsely populated counties. Salaries were negotiated; in some cases the RMRRC payed only for the summer months (since stratisticians were on a twelve-month contract) and in other cases the RMRRC payed the total salary.

The stratistician's instructions were simple. They were to:

1. respond to any type of referral that came from teachers having problems thus providing a service to the school; and
2. record data on all aspects of their role. The data to be gathered included:
   a. the type of problems being referred;
   b. the types of students in regular classrooms who were being referred;
   c. the strategies tried that worked and did not work with the students;
   d. the process of how referrals were made;
   e. the content of the referral;
   f. how teachers reacted to the role and used or did not use the stratistician;
   g. how they worked with principals teachers, parents, and district personnel.

The stratisticians were to be in the schools four days a week and on the fifth day would meet with other RMRRC personnel to share ideas, receive additional help from each other and from other RMRRC staff, deposit data collected and get further instructions on data needed. The stratisticians were not expected to have all the answers to the potential problems that were referred. The rest of the RMRRC staff (the director, the assistant director, the evaluation coordinator, the psychologist, the instructional media specialist, and the research assistants) was available as a first-line support of the stratistician. The faculty members of the Department of Special Education, University of Utah, were also available for help in their area of expertise.

At the end of the school year, response from the school principals and school districts was enthusiastic. Over ninety percent of the teachers in the five schools where stratisticians were placed full-time had received service from the stratistician, interacting on a one-to-one basis, in small groups or as total faculty groups. The nonstereotyped role allowed the stratistician to move freely across many roles and draw together resources that in the past had been fragmented and operating in isolation. By focusing on helping the referring teacher to work with the referred student, a larger number of students received services than would have been possible through traditional self-contained or resource room models. The straticians were working with all areas of exceptionality found in the school; however, they worked from a learning-problem stance as opposed to a categorical stance.

During the summer the straticians were asked to identify the basic skills they felt were necessary to fill the role. The skills identified could be loosely grouped into the following categories:

1. The ability to diagnose or assess children's problems, not only with formal measures but especially with informal methods;
2. The ability to translate the diagnostic information into educationally related objectives;
3. A good working knowledge of curriculum materials available for general problem areas plus the ability to adjust program materials to meet specific needs;
4. The ability to evaluate the appropriateness of an educational program they suggested and to make the proper changes when necessary--plus the ability to evaluate longer range pupil achievement;
5. The ability to interact with a wide range of people in a wide range of situations displaying interaction skills in sending and receiving communication, problem-solving and gaining acceptance in a school.

Despite the enthusiasm generated, problems did arise in this first year. The initial concept of placing a person in the school to gather data and provide some services was transformed; the emphasis shifted to a person who was highly successful in providing much needed service, and who also collected data. The straticians became torn between service to the RMRRC or to the school and district where they were placed. This became apparent not only in the motivation to collect data, but also in identifying with the RMRRC one day per week when a part of the school and faculty four days per week.

Another problem occurred in trying to measure the effectiveness of the stratician placed in the multidistrict service unit in relation to the originally conceived ideas. There is little doubt that the service rendered was of value and indeed much needed in such areas. However, a person in this role could not be compared to the five placed in single schools.

YEAR THREE

More specific information was needed on what was apparently successful during the first pilot year. Two new straticians were added to the initial six, one in a school with a heavy minority population and the other in a rural school district with the stratistician serving two elementary schools approximately forty miles apart. These two placements were to add additional data on the types of problems and problem resolution strategies in specific populations and provide information on the skills a stratistician would need to work in these environments.

Three of the initial six remained in their respective positions. So a total of five new stratisticians were hired; three to fill the other three positions from the initial year plus two new ones. These people were selected with the same criteria used in selecting the first six stratisticians. The experience of the previous year did enable the interviewer to give prospective stratisticians a better perspective on what the job entailed; the interviewer could also structure the interview to relate to the real problems which the stratistician would face. To help coordinate the efforts of the eight stratisticians for this phase, a field service coordinator position was created. The person in this position--a former stratistician--was to also coordinate presentations and workshops requested of the RMRRC.

The stratisticians' summer activities in preparation for the coming school year included orientation to the Regional Resource Center concept, a week-long workshop on Self Enhancing Education, simulations of potential experiences, and an intensive two weeks of creative work on developing a behavioral observation system. This system grew out of an expressed need of the stratisticians to gather more than frequency counts and limited interaction data. It expanded on observation system attempts by some of the stratisticians and eventually became known as the Systematic Observation of Behavior (SOB). (The SOB is discussed at length in Chapter One.)

In addition to providing an opportunity to examine in closer detail the original stratistician concept, the expanded staff provided an opportunity to explore services in more depth. Three of the eight schools had the same stratistician as the year before; two other placements plus the one in the multi-district service unit had the same position, but a new person filled that position.

There was also the new position of field service coordinator filled by one of the first-year stratisticians. This role was to provide coordination to the efforts of the eight stratisticians, advise and arrange training for the new stratisticians, receive requests and arrange for presentations and workshops, and conduct the Friday meetings at the RMRRC, which were reduced from one day per week to one day every other week. In addition, the field service coordinator was the liaison between the RMRRC, and the district administrators and principals involved in the project. The coordinator also organized and conducted the quarterly Participating Districts Advisory Committee (PDAC) meetings. (The PDAC membership included principals and district administrators from the stratistician's district, a USBE representative, Department of Special Education members and involved RMRRC staff members.)

The developmental year met with essentially the same success as the initial year. Preliminary data seemed to indicate that at any given time the stratisticians could actively work with teachers for a minimum of sixty referred students. Through the direct help to the referring teacher, the teacher was able to supervise the special programs for the students enabling them to remain in the classroom, sometimes with the help of a tutor. Again, over ninety percent of the teachers in the eight schools involved benefited from direct service by the stratistician. In addition, other teachers in the cooperating districts (as well as in other districts throughout the state) benefited from workshops presented by the stratisticians. The stratisticians were also involved in presentations to university students in special education. The preliminary data also reinforced the information gathered during the previous year that there were handicapped students in the regular classrooms who previously were not receiving special education services.

As successful as the year was, there were still some concerns. The stratisticians still felt the pull between being part of the RMRRC with its data gathering needs and being part of the assigned school's faculty with its service needs. In placement of the one person who served two schools, service could have been more effective if someone in each school had been officially designated as a follow-up person when the stratistician was not there. It would also have been helpful if the persons involved in the two schools and in the district had been in agreement on how the person's time was to be used in both schools. For such placements in the future, it is recommended that service be based on needs, allowing some flexibility rather than a fixed schedule. The placement of the person in the multidistrict service unit again provided service to the recipient schools but the work covered too many schools, teachers and children to really provide a basis for comparison to the other stratisticians.

The success of the stratisticians raised the question of whether or not success was due to the concept of the stratistician service model or because the stratisticians were such highly skilled special educators. Before the year was over, plans were underway to evaluate a generalized form of the model.

YEAR FOUR

The experimental phase was characterized by attempting to implement the stratistician concept in a wider variety of school settings with special educators selected by districts involved. The following strategies were utilized:

1. Through a cooperative effort with the Utah State Board of Education, most of the 40 school districts in Utah were invited to indicate their interest in the stratistician service model.
2. The districts would select the school or schools and the persons who would fill the stratistician role.
3. The persons selected by the districts to function as stratisticians would be totally on district payroll and would not be considered RMRRC staff.
4. The persons selected by the districts would be out of their schools to meet with the RMRRC only once a month.
5. The districts agreed to participate in an extensive data collection effort handled primarily by the RMRRC staff, but of necessity requiring time and effort from the district personnel. Data collection revolved around the evaluation of the impact of the model on children, teachers and administrators. Child data consisted of measures of academic achievement and social emotional growth. Teacher data attempted to measure classroom climate and attitude. Finally, the administrator data reflected the perspectives, attitudes and training of superintendents, directors of special education and the principals from the participating districts and schools.

To help facilitate the district-selected personnel who would function in the role of a stratistician, the RMRRC was to:

1. Identify the skills and competencies necessary to function as a stratistician and develop a program to train for those competencies;
2. Cover all expenses of the training program including reimbursement for mileage to and from the RMRRC, per diem for those who had to stay overnight, a stipend for each of the participants, and cover all expenses on data collection and scoring;
3. Leave copies of data collected with the district and schools;
4. Provide monthly sessions to follow-up on early training or provide experiences to broaden trainees' experiences;
5. Provide back-up support in the school at least twice a month for each school from a member of the RMRRC staff;

6. Provide orientation sessions for district administrators, principals and faculties of the cooperating schools to define the intent and scope of the project prior to the beginning of the school year.

Of the more than 30 districts invited to participate, 21 asked to be considered. These districts were contacted by the RMRRC, given a brief history of the development of the stratistician concept and an overview of what the project would entail for the coming year. The 11 districts that finally participated in this experimental phase were those that:

1. Indicated a strong interest in wanting to be involved;
2. Were willing to become involved in the heavy evaluation requirements of the project;
3. Were willing to release the person or persons selected from their district once a month to attend follow-up sessions at the RMRRC;
4. Had selected a person to participate who was available for the training session scheduled before the start of the school year.

Also, during this time, efforts were being made to identify competencies needed by the stratistician and the training methods to be used in training for these competencies. The primary source for identifying competencies was information supplied by the stratisticians. These competencies reflected the actual activities the stratisticians had performed in the two years. A secondary source of information came from three major school districts on the kinds of skills they would like their special educators to have. Further information was gathered through a joint effort between the USBE and the RMRRC; a large group of educators from across the state were asked to identify the kinds of problems students present to special educators. The accumulated information was then cross-checked against a wide range of national special education competency-based training programs to insure that nothing had been overlooked. The skills thus identified gestalted into the content areas of identification, diagnosis, prescription, programming, evaluation and interpersonal skills.

In examining various structures for training programs, RMRRC staff members felt that training should cover processes on various levels to meet the identified needs. The process levels identified were knowledge, understanding, application, analysis, synthesis, and evaluation (from Bloom's Taxonomy of Educational Objectives). The content areas and the process levels were placed on a matrix (Figure 1), and training modules were written to address each identified competency at the specified process level. Twenty-four modules were written for use in training the district selected personnel. (See Appendix G for more detailed information on the training program.)

Content

PROCESS

	IDENITY	DIAGNOSE	PRESCRIBE	PROGRAM	EVALUATE
KNOWLEDGE (recall)					
COMPREHENSION (understanding)	1 2	7 8		19	
APPLICATION (use)	3 4	9 10		20	
ANALYSIS (clarify)	5	11 12 13	16		
SYNTHESIS (regestalt)			17	21	23
EVALUATION (judgment)	6	14 15	18	22	24

INTER SKILLS
a b c d

Figure 1

Placement of Learning Modules by Number on the Content-Process Grid

The development of the training modules and the structuring of the training sessions were patterned to overcome several constraints:

1. The representatives from the districts might have certification in any one of several areas: Mental Retardation, Behavioral Disorders (Emotionally Disturbed), Learning Disabilities or Speech and Hearing. This meant the training program would have to be broad enough to encompass those with various training backgrounds.
2. Participants with the same certification might have received their training from different institutions with completely different philosophies or approaches.
3. Participants could have a wide variety of work experience in the schools, from no experience to many years of experience.
4. Because participants were coming from different districts in the state, school starting times could vary from August 23 to September 7. This meant that scheduling of the training session would be difficult.

To overcome these obstacles, material was developed so it could be used individually or in small groups. A pre-assessment device was developed to help participants decide if they needed additional help in achieving a particular competency level. The training sessions were structured for a total of ten days, with participants selecting one of six different starting dates.

The individuals selected by the districts to participate with the RMRRC in this program were called stratistician/generalists by the RMRRC. From the 11 school districts, 17 stratistician/generalists were involved in the year-long program with the RMRRC. Three intermediate stratisticians at the RMRRC provided back-up support to the stratistician/generalists during the school year. The intermediates' role was to take primary responsibility for the training of five or six stratistician/generalists during the training period and then to meet with those same people at least twice a month in their schools during the school year. The intermediate stratisticians had had at least one year's experience as a stratistician. The stratisticians from the first and second years wrote and presented the training program, which was set up for a three-week period in August.

With 17 different people from 11 different districts being trained, a wide range of possibilities for adapting the stratistician concept to the real world emerged. During the initial and developmental phases, the stratisticians had been able to maintain a basic focus on working with the teachers rather than students. This occurred despite wide variations in the support services available in the schools. However, because of a change in Utah's state school finance formula involving services to students in special education programs, after the initiation of of the project, it was difficult for the stratistician/generalists to work strictly with teachers. The basic concept, of necessity, was adapted in different ways to fit the varying needs of the particular schools and districts during this experimental year. In some areas, the stratistician/generalist was the only special educator available to provide for the educational needs of those students who needed a self-contained classroom. In such cases, the stratistician/generalist functioned part of the time as the teacher in the self-contained classroom, and part of the time working with the other teachers in the school. In other situations, particularly in small rural districts, the stratistician/generalist was the only special educator in the district and so served in both the elementary and the secondary special education programs.

The role of the intermediate stratistician presented another variation worth examination. As mentioned above, the intermediate stratisticians were former stratisticians who were involved in developing training material; they were then assigned to train six stratistician/generalists and then visit the new recruits in their schools at least twice monthly. The problem usually associated with itinerant models--no follow-up after the itinerant leaves--was not a problem because the stratistician/generalists were in the schools daily. The other problem associated with itinerant models--the difficulty of being effective in the short period of time during a visit--was lessened because the intermediate stratistician had already built a relationship with the stratistician/generalist during the initial training period and could thus respond more immediately and appropriately to the needs of the stratistician/generalist.

The scheduled monthly meetings also enabled the intermediate stratistician in being successful in an itinerant role. Perhaps the greatest single benefit from those meetings came from interactions between the stratistician/generalists, and the opportunity to share experiences with peers.

STRATISTICIAN QUO VADIS?

The RMRRC's original intention was to complete evaluation, summarize and polish the stratistician model in the fifth year. This would have included an in-depth study of the efforts thus far; revision of the competency statements based on the fourth year's efforts; improvement of the training program for use by trainers of special educators; and development of recommendations to SEA and LEA directors of special education on the potential uses of the stratistician model. However, with the redefinition of regions by BEH, planning changes had to be made. The RMRRC received an extension of the original grant to edit the material used by the intermediate stratisticians and have it duplicated. Time restrictions did not permit the development and polish originally intended; however, the RMRRC also received permission to analyze the data collected during the final year.

Although the model was not completed to the desired extent, ideas that came from the stratistician project are in practice in some districts across the state. Dialogue also continues with the USBE on future implications for the stratistician concept in the state. Certainly the stratistician model provides a viable alternative for serving handicapped children in regular classrooms who are too often unserved.

APPENDIX I

Reading the Environment to Gain Acceptance

READING THE ENVIRONMENT

If you are to begin working in a new situation where your effectiveness depends on your acceptance, then the more information you have about that situation, the more likely your chances for success. Reading the environment means becoming keenly aware of the basic organization and structure, i.e., where things are, how and when they are used, and who the people are. The acceptance techniques presented here should be useful to anyone entering a new working situation. These techniques are, however, specifically aimed at the adult who will work primarily with other adults in a school. While all teachers desire peer acceptance, it is imperative that the support person who works with the other adults in a school be accepted in that environment.

Basic Structure and Organization: When you enter a new school you are usually shown around the building. As the principal or another guide takes you around, you will probably be interested in two things: first, the location of your room or office space, and second, the sites of a few key locations, such as the office, media center, faculty lounge, rest room, and cafeteria. As the school year progresses you will get to know where everything is located. However, if your goal is to maximize the possibilities of being accepted by the people in the school, you need a good understanding of the physical layout, the personnel and scheduling. The following are suggested to speed up the process of getting to know the school:

1. Upon your first introduction to the school, draw a map of the building's physical layout. (Some schools have floor plans available.) Make sure the map includes the total building plus parking areas and playgrounds. If students are bussed to the school, indicate where buses are loaded and unloaded.
2. On your map, write the names and locations of all school personnel. This not only includes the teachers in their classrooms, but the principal, secretary, custodian, lunchroom workers, school bus drivers, playground supervisors, paraprofessionals, nurse, social worker, psychologist, and other district support personnel who, when in the building, usually work in a particular space. That space allotted to each person is as important to them as your space is to you. Information on who the people are and where they are located may be obtained from the school secretary or the principal, if he has time. More often than not, when the principal sees your map with names and locations specified, he will want a copy for himself. (It is also possible that he will request copies for all personnel.)

3. The map should also include those areas that may not be assigned to a person, but nonetheless, are important to a school's functioning, such as the multipurpose room, book storage room, supply room, boiler room, janitorial supply room, restrooms, faculty lounge, projection rooms, and in some cases empty rooms. You may also want to note where items are located that are important to your functioning, such as student files.
4. The space around the building is also important. As suggested earlier, parking areas, places where school buses are loaded and unloaded and areas used as playgrounds should be designated. Playground equipment and types of facilities should be noted.
5. Once you collect information on the physical layout, the next step is to gain information on its use; this information usually falls into two categories, regulations and scheduling. Most schools will have a written set of regulations which outlines the use of almost all facilities, and might include the responsibilities of the personnel who use them. If not in formal written form, there are probably informal regulations. You will want to know the schedules that are fixed, such as starting and ending time of school, lunch and recess times, and how areas without set schedules can be reserved, such as the multipurpose room, the media center, projection rooms and playground areas. Other schedules you will want to know about include lunchroom duty, hall duty, playground duty, bus duty, etc.
6. Another type of useful information is the boundaries of the school, the general boundaries of the school district and where this particular school fits within the general systems, i.e., which elementary schools lead to which junior high schools, and in turn, which junior high schools lead to which high schools.

All of the above information can be gathered easily in a short time and should be in your possession prior to the beginning of school. It is particularly useful if you are new to the school. If you have been in the school for some time, it is recommended that you sit down with paper and pencil and check your information to see if you can cover all of the areas mentioned above.

The Humans in the Environment: Although the information described above is straightforward, reading the humans in the environment is very complex. The personnel in the school can be approached in three groups: the principal and teachers form one group; other personnel in the school (such as the secretary, lunchroom workers, custodian, paraprofessionals, bus drivers, volunteer workers) could form a second group; and those who do not spend all of their time in the school but perform important services there (such as psychologists, social workers, nurses, speech therapists, curriculum specialists), could form a third group.

Since the teachers and principal comprise the largest grouping and are probably the most critical in terms of your acceptance in the school, any information you can gather for your eventual interaction with them will be helpful. Reading the environment as it relates to this group calls for attending to all available cues and organizing that information in a useful way. The following suggestions should provide you with at least a start:

1. Recognize and record interests and interactions the various faculty members have in common. For example, all of the first-grade teachers in a school have teaching first-grade in common and will interact with each other not only on topics related to teaching first grade but on other topics as well. Also, your map of the school will indicate how the building's architecture might isolate staff into pockets or clusters. The people within those clusters will interact more with each other than they will with others in the school simply because they have more access to one another. Other types of interests or interactions to watch for include:

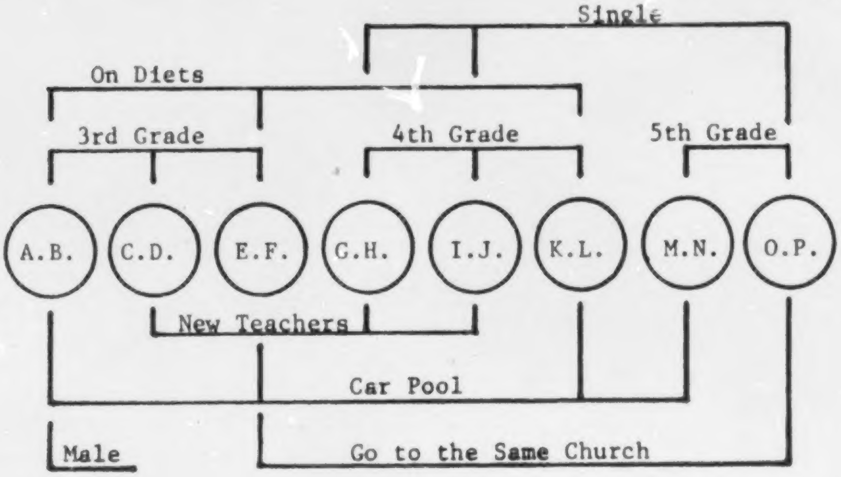
   a. People who share car pools;
   b. Those new to the school;
   c. Those who graduated from the same university;
   d. Those who live in the same geographical area;
   e. Those who belong to the same organizations;
   f. Those who have similar hobbies and interests;
   g. Those who have worked together in other schools;
   h. Those working together on various committees;
   i. Age, sex, marital status and/or ethnic factors which may give people a common group for interacting;
   j. Those on diets;
   k. First year teachers;
   l. Those who drive the same make of small car.

The list, of course, could go on but the basic idea is to note who is interacting with whom, what the basis might be for that interaction and who else in the school might share that common basis. Being alert to the cues that give information on what people have in common is a good beginning but it is also helpful to have a method of recording or organizing such information.

2. Compile the above information and arrange it in a useful format. One suggested way will give you a quick visual image:

   a. On a paper, draw a series of circles approximately 1/4 to 1/8 inch in diameter, as in the following diagram. There should be one circle for each member of the faculty including the principal, yourself and other key people in the school.

   b. Use one circle to identify each person by writing their name or initials in the circle. It is suggested that you group people according to grade levels, beginning with the kindergarten teachers, then first-grade teachers and so on.
   c. Draw lines to connect people who have common interests; label the lines with the commonality. These lines present a visual image of already established informal lines of communication.



This diagram depicts only a portion of the information to be collected. To be complete it would include all teachers in the school as well as yourself. It would also have more lines representing more interests people have in common. The information used to chart commonalities comes from many sources. Begin collecting information when you meet the teachers at the first faculty meeting, and be attentive to conversations of faculty members in the lounge or lunch rooms.

3. Another suggestion is to gather information about the potential recipients of your service that will help you establish contact and communication. A suggested way for doing this would include the following steps:

   a. Divide a paper into three columns.
   b. In the first column, list the names of all the teachers and other key personnel. A concentrated effort should be made to know everyone by name within the first two or three days of school.
   c. In the second column, list by each person's name what you have in common with that person. Some of this information can be taken from the first chart you have completed. You will notice, however, that you will have blank spaces by some names. In those cases you will want to be especially alert in faculty meetings, the lunchroom and faculty lounge for potential clues.
   d. In the last column list by each name the "strengths" of that person. These are the positive abilities that you have observed about the person relating to his job. This column is only for positive comments and you should not stop until you have listed something positive about everyone on the list.

The above suggestions for reading the humans in the environment are not only to give you a "reading" on the people you are to be working with, but, also, to place yourself within that environment. It will also be useful when working interactions begin with the teachers. Both the above chart and lists can be roughed out during a faculty meeting when everyone is present and you want to check out how much you know about the people there. The diagrams are not intended to be time-consuming, detailed reports but quick checklists containing simple notes.

Although the suggestions have been focused on the faculty members of the school, the same activities apply to anyone else who is in the school full-time or part-time. School secretaries and custodians are an integral part of the school functioning and the human environment. You should also know by name everyone who comes into the school on a regular basis and know what their function is within the school. Again itemize what you have in common with them as well as relationships and interaction patterns they have already established with others in the school. You will want to note how their role in the school relates to your role.

Formal and Informal Power Structures: Within the school environment there will be a formal power structure that is fairly easy to note and record. There will probably also be an informal structure that is sometimes more difficult to pinpoint;

nevertheless, if you are to accomplish your goals it will be important to recognize this informal power structure. The formal structure consists of the building principal, who is the ultimate authority in the school, his assistants, committee chairpersons appointed by the principal for specific functions, and district administrators with authority over particular functions of the school. Usually, those with formal authority have power over the informal power structure if and when they choose to exercise it. An informal power structure, however, is usually in a position to influence the decisions made formally, thus protecting and perpetuating the informal system.

Identifying the informal power structure usually begins by noting how decisions are made, who influences those decisions, and how people react to them. The most obvious place to watch for this is in a faculty meeting. When issues are being discussed, note who tends to dominate the group. This domination can result from the person's brilliance and logic, volume and frequency of responding, or by silence or withdrawal during a discussion, which is noticed by other members of the group. Often this dominance is acquired because of apathy from other group members. Most decisions in a group are made by a few vocal participants with acquiescence of the other members. Even if there is more group involvement in the discussions, support will tend to polarize around a few people. In a very short time, consistent patterns will emerge and the alert observer will begin to perceive the informal power structure.

Very seldom does a principal make all decisions without advice, but decisions may be handed down without group discussion or use of the democratic process. In these cases, the informal power structure is probably operating in a one-to-one relationship with the principal. Note who seems to "have the ear" of the principal, who the principal spends the most time with, who the principal interacts with in a more friendly, personal way, and whose opinions, ideas or needs seem to most closely parallel the decisions that are made.

Any power structure is only as powerful as those whom it presumes to control will allow. By joining the school system you have given over some control of your life to the formal structure of the district and to the building principal, who will decide the days you will work, the hours you will work, when you can eat lunch, what space you may occupy in the school and the kinds of activities you may perform within that space and time. Informal power structures exist because people are willing to relinquish some of their power to other people who are willing to take it. One way to give up control is to avoid involvement; anytime a person is not interested in a decision, it will be made by those who are interested.

As discussed earlier, most decisions in faculty meetings are made by a few people and the rest of the group goes along. In one school, the decision as to what creative art activities the students would be offered was not set by district policy, nor by the creative needs of the students, nor by the creative skills of the faculty, nor even by the amount of money in the budget; the activities were dictated by the building custodian who did not want to have his job complicated. In another school, library books could not be checked out of the media center because the person in charge did not want to track down overdue books nor account for lost and damaged books. In both cases, the decisions were not based on the educational needs of students, yet everyone accepted the decisions. These decisions were disliked by some or by all, but they were not challenged and therefore they gained legitimacy. In both cases, the formal power structure could have overturned the decision, but did not. This is probably also because no one challenged them. These examples are just two of many which attest to the fact that an informal power structure does exist in the schools and your ability to recognize it is a critical part of reading your environment.

BASIC STANCES ABOUT YOUR ROLE

One of the basic principles in gaining acceptance by others in the school is to BE A PERSON HARD NOT TO LIKE. Everything you say and do in the school should begin from this base. Before you even enter the school you must articulate some basic stances about your role and how you are going to approach and/or react to situations relating to that role. What you personally have to offer, how you present your role, how you intend to fit into the power structure, and your manner of interacting with others are basic stances about your role that you will want to think through ahead of time.

Begin Working From Where You Are: As requests for your help are received, you will have to respond from your own repertoire of skills. If you have a realistic appraisal of your abilities, you can respond immediately to requests with which you can succeed. This should not suggest that these are the only requests you will respond to. It does suggest that you will know the things you can do well and the things for which you will need outside help. You should not expect to be able to do everything. At the same time you should be willing to risk, to try, to learn new skills without being afraid of failure.

Avoid a "Power-Hat" Role: It is very difficult to really be accepted as a helping person if you are perceived as one who can threaten another's job security. Even when your role in actuality has nothing to do with anyone's job status, if others perceive you in that light, it has an effect on your relationship. The following suggestions may help avoid the problem:

1. Be a peer faculty member in every sense of the word. Get involved in everything that other faculty members do. Volunteer to serve on committees; sign up for hall duty, bus duty, playground duty, and lunchroom duty; attend faculty meetings, faculty parties, after-school functions and PTA meetings. Do not use your role to avoid anything other faculty members do, especially not those things they dislike doing.
2. Avoid the administrative stereotype. Because your role differs from that of classroom teachers and because you are generally working with the whole school, it is easy to get trapped into a semi-administrative-type role. The principal may see you as very useful and give you some duties that could place you in such a role. Be aware of this possibility and try to approach such assignments from the principal as any other teacher would and convey that image to the faculty.
3. Do not "spy" for the principal. You will be in a position to hear and see many things that are happening in the school. You should have a clear understanding with the principal from the beginning that you do not intend to evaluate teachers or provide information specifically for that purpose. If you begin that practice, word will rapidly spread through the faculty and your acceptance and effectiveness will be reduced.
4. Avoid making judgments about a teacher's professional ability. Whether asked by the principal, another teacher, the secretary, the custodian, a parent or a person from the district office, the only information you should share are the positive abilities you have noted about the teacher. One negative comment from you will spread via already established communication networks, such as car pools, those in the same wing of the building, those who eat lunch together, etc. The positive comments will not travel as fast but they will certainly not undermine what you are trying to do in the school.
5. At the same time you are making an effort to be a peer faculty member, you want to avoid the faculty lounge or lunchroom game of stating negative opinions on: education as a profession; the school in which you are working; administrative and district personnel; students in the school; parents; and other teachers. It is also suggested that you try to counteract negative trends by pointing out the positive or directing the conversation to address problems in terms of needs and not personalities. Otherwise it is possible that your silence could be interpreted as agreement.

Your Role Will Define Itself Through Your Actions: It is helpful to have someone introduce you to the faculty and state your role or for you to tell them what your role is; but it is what the teachers hear and see you do and particularly what you do for them that creates in their minds the image of your role. This requires constant one-to-one interactions with individuals to answer questions and to redefine the role. You cannot do this adequately unless you have thought through the broad versus the narrow perceptions of what your role might entail. Yet you need to be flexible enough to be able to expand your role to meet teachers' needs. These needs may require you to be a facilitator, a coordinator, an inservice trainer or a resource to teachers. Your actions will also communicate to teachers that:

1. You are offering service to handicapped children;
2. You are focusing on helping the teacher work with the children;
3. You are more than an "IQ tester;"
4. You are willing to risk and can accept failure in yourself and allow for it in others;
5. You are open, nonjudgmental, and willing to hear concerns.

The person who can provide immediate, on-site help to the classroom teacher of handicapped children, can become a dynamic element in expanding services to all handicapped children. If you are to fill this role, reading the environment and understanding your part in that environment should lead to your acceptance in the school. While your interactions with the faculty will need some ongoing attention, your energies can be directed to your main task which will be facilitated in an accepting environment--that of helping the classroom teacher expand and enhance services to handicapped children.